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ADDRESS.

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WASHINGTON, D. C.

Ladies and Gentlemen:—The Faculty of the Medical Department of Georgetown University has decided upon a new departure in medical teaching in the District of Columbia, and by their invitation I am here to deliver an address upon an occasion which they very properly consider to be one of unusual interest to the medical profession and to the citizens generally in this great and rapidly growing capital city. Heretofore the courses of instruction have been so arranged that students who are occupied, during the official hours, in the various government offices located in this city could take advantage of them. This has no doubt made it possible for many industrious and deserving men to obtain the degree of Doctor of Medicine who would otherwise have been unable to do so. And I presume that a fair proportion of those who have pursued their medical studies under these circumstances have become successful practitioners of medicine, while others have been satisfied with the title of Doctor, and have, wisely perhaps, held on to the salaried position which enabled them to secure their medical degree. While this system has no doubt been advantageous to many worthy young men, and has supplied the ranks of the profession with a certain number of well-qualified practitioners who have risen to prominence in their chosen profession, it is generally admitted that it does not give the best possible results. There is something to be said, however, for the class of men who have taken advantage of it. The fact that they have been able to secure a government position may be taken as evidence that their English education is better than that of very many of those who obtain a medical degree elsewhere, and their industry is made evident by the fact that they are able to pass creditable examinations at the end of their course, although the best part of each day is, or should be, spent in the more or less exacting duties for which they receive a salary from the government.

My experience as a member of Army Medical Examining Boards leads me to the conclusion that very many of those who receive degrees from medical colleges, in all parts of the country, would utterly fail to pass the civil service examination required of clerks in the government service. The mistakes in orthography, grammar and literary style made by a considerable number of the candidates for admission to the Medical Corps of the Army are lamentable and sometimes amusing. It is said that a Navy examining board on one occasion rejected a candidate for spelling Philadelphia with a small f. Certainly no amount of medical knowledge, at the present day, will enable an illiterate man to maintain the respect and confidence of educated people. The man with a defective medical education may impose upon his non-professional fellow citizens, and if he has an agreeable address and an elastic conscience may become a successful practitioner—if success is to be measured by the number of his patients and the extent of his income. But a defective English education is something that reveals itself, sooner or later, to the educated classes, among whom a physician with a reasonable degree of ambition and self-esteem would naturally hope to practice.

A recent editorial in a leading medical journal (*The Medical News*) refers to the importance of correct English orthography as follows: "There can be noquestion that men have shown ability to do good intellectual and social work of undoubted value to civilization who could not spell ten words correctly. But, and here's the rub, that day is either past or should be past. It is by every one admitted, and by none more fully than by the combined good physician and poor speller, that without the preliminary education, evidenced at least by correct spelling of one's native language, the modern physician is now and henceforth not only handicapped, but utterly outclassed in the race of life. It is not that knowledge of spelling will make one the better physician, but the lack of that knowledge certainly gaurantees other lacks that squarely debar from the higher education essential at this day. It has been said that without money, or a certain amount of it, one can not get what money alone can not buy, and it is much the same with preliminary education."

The editor appends to his article a list of 120 misspelled words which he says, "is culled with exact spelling from the papers of those examined by the Board of Medical Examiners representing the State Medical Society of Pennsylvania." I select a few examples from the list given: Apatite, Assleep, Alsow, Boath, Fatial (facial) Hedacke, Jerms, Ulser (ulcer), Sudent (sudden), Skinn (skin), Sower (sour). Comment is unnecessary, but we may remark that the examiner who furnished the list referred to, to the editor of the *Medical News*, says that "some of these gentlemen were graduated this year by medical colleges in Philadelphia."

This illiteracy of graduates in medicine is not limited to any section of the United States, and a presidential address recently delivered by a distinguished English physician indicates that the evil is not limited to this country. W. Mitchell Banks, M. D., F. R. C. S., in his address as President of the Lancashire and Cheshire Branch of the British Medical Association, has discussed the subject of "Overcrowding in the Medical Profession and its Remedy." His remarks are so pertinent, and apply so well to condi-

tions existing in this country, that I shall take the liberty of quoting at some length from his address:

"Many circumstances have contributed to this overcrowding. In former days a man of good family and social rank, but whose fortune was not very great while his children were numerous, could often find places for a son or two in the Church or in the Army, through the influence of powerful friends. But the days of interest are gone, and these avenues are closed now. As for the bar, the numbers of the briefless seem ever on the increase, while legal proceedings are actually diminishing in number. In business, the quiet old trading days are done, and there is nothing but hurry and conflict and cheating and risk. So that the merchant sees in medicine, a comfortable sphere of life, where a living can usually be made by any sober and industrious man. Thus the great medical schools have been pouring out a deluge of young practitioners, which has overwhelmed the land."

After speaking of the demoralizing effects of the overcrowding of the profession, among those who are pushed to the wall on account of educational or social disadvantages, and of the ignoble methods often resorted to by graduates in medicine in order to keep the wolf from the door, Dr. Banks proceeds to speak of the remedy for this condition of affairs, as follows:

"The finest thing that has been done for the profession for many a long year was the enforcement of the five years' curriculum, and its effect in diminishing the numbers at some of the gigantic doctor factories has already been quite pronounced.

"Well, then, you ask, what is my remedy? My remedy consists simply in stiffening up the entrance examinations. I hold that there ought to be a rough sieve supplied at the very beginning, and that all who can not get through this sieve should be cast on one side. As things stand at present, any man who gets through an entrance examination will ultimately get a qualification of some kind, which enables him to put "Doctor" on his door-plate, with just as much effect as a graduate in honors of the London University. You can not hinder him from this by any amount of scientific or professional examinations. He will rub through these, bit by bit. Any teacher of experience will tell you how futile it is to attempt to turn back a man who has once passed an entrance examination, if that man is determined to go on. Beside, it seems to me unfair to allow an inferior man to enter upon a course of professional studies for which he is obviously unfitted. He ought not to be allowed to get so far. He should be turned back at the very commencement, and not encouraged to throw away years on unavailing work.

"I have said that I consider the subjects of a medical education and the examinations therein to be amply sufficient if they are only properly kept up to the mark by due inspection. But I do not admit this with regard to the entrance examinations. These vary in the most remarkable manner, both as to subjects and the severity of examinations. I have not been teaching students for nearly thirty years without knowing what I am talking about, and I say that there are in the profession at this moment, an enormous number of men whose general education is of the lowest type, and who never could have got into it if the entrance examinations had been of a proper standard. Ask any examiner of experience what he thinks of the English of the papers he has to read, and he will tell you that it is often lamentable—spelling, punctuation and composition being simply set at naught.

"Again, some six years ago, the Secretary of War sent a letter to the General Medical Council, complaining of the want of knowledge of their own language shown by candidates for places in the Army medical service. I heard this letter read, and I never felt so ashamed of my profession in my life. It seemed to me a most ignominious thing for us, that even soldiers should point the finger of scorn at us in the matters of general education."

Without doubt the remedy proposed by Dr. Banks should be applied for the relief of a similar condition of affairs in our own country. Uneducated men should not be admitted to our medical colleges as candidates for the degree of Doctor of Medicine. The graduate who is deficient in knowledge of medicine may make good this deficiency before he is overburdened with practice, and if he has made no mistake in selecting his vocation will not fail to do so. But the man whose early education has been neglected rarely overcomes this defect.

As to the extent of the requirements at the examination for entering upon the study of medicine, I am not disposed to be as exacting as some would be. A sound English education, such as may be obtained at the higher schools in our principal cities, and a sufficient knowledge of Latin for correct prescription writing, is all that we demand of candidates for the Medical Corps of the Army and, in my judgment, is all that should be required of the young man who desires to enter upon the study of medicine. Certainly, this is not asking too much, in view of the fact that a considerable proportion of the recent graduates of medical colleges in this country are rejected by Army and Navy examining boards on account of their deficient knowledge of English grammar and orthography. Steps have already been taken in some of the States to remedy this deplorable condition of affairs, by means of legislation regulating the entrance examinations. In New York these examinations are now made under the direction of the Regents of the State University. It is evidently a step in advance to make them independent of the colleges, and uniform as to standard.

I must not dwell longer upon this topic, the importance of which no one will be inclined to deny, and will proceed to consider the reasons which have induced the Faculty of the Medical Department of Georgetown University to make a change in the hours devoted to instruction, and to extend the course of instruction to four terms of seven months each.

In the Announcement for the present year the reasons for this change are stated as follows:

"The demands of modern medical education are such that the faculty has found it necessary to extend the hours of instruction so that more time may be given to practical work in laboratories and hospitals."

Here we have a recognition of the fact that the graduate in medicine requires something which he can not get from medical books or lectures. No doubt a bright man, by consuming the "midnight oil," might be able to pass a creditable examination at the end of a three years' course of evening lectures; but "the demands of modern medical education" call

for something more than this, viz., for "practical work in laboratories and hospitals."

The student obtains his practical knowledge of anatomy in the dissecting room, and his skill and success as a surgeon depend largely upon the extent and precision of this practical knowledge. This has long been recognized, and the candidate for graduation has been obliged to present evidence that he has done a certain amount of work in the dissecting room. But it is only recently that our leading medical colleges have required a practical knowledge of chemistry, physiology, pathology and materia medica such as can only be obtained in the laboratory.

The requirements for graduation of the Medical Department of the University of Georgetown are stated as follows:

"The candidate must be of good moral character and at least 21 years of age. He must have studied medicine not less than four years, during which he must have attended four full courses of instruction, delivered in some recognized medical school, the last of which shall have been delivered in this institution. He must have attended at least two courses of practical anatomy, laboratory courses in physiology, chemistry, histology, pathology and bacteriology, and the clinical courses of instruction."

The laboratory work required is an essential part of a medical education, not only on account of the practical character of the knowledge acquired, but because of the special training in scientific methods and the development of a spirit of scientific investigation which results from such training.

The great obstacle to the advancement of medical science in the past has been respect for authority and the acceptance of theories and supposed facts without submitting them to the test of experimental verification.

The humoral pathology which Galen (born A. D. 130), developed from the previous teachings of Hippocrates, controlled medical thought and influenced medical practice for fifteen hundred years. But we have been emancipated from the trammels of theory and superstition, and the medicine of to-day is largely based upon exact observation and experimental demonstration. In other words, we may now properly speak of medical science—for, while our knowledge in many directions is far from being complete, it is founded upon a scientific basis of observation and experiment and is being rapidly extended by scientific methods.

Scientific medicine, as taught in our medical colleges, includes all that is known of human anatomy and physiology, of pathology and clinical medicine, of the natural history of disease, and the influence of physical, moral and chemic agencies upon the human body in health and disease, of the action of drugs and their preparation for therapeutic purposes. And the scientific physician is one who possesses a large share of this knowledge and has the faculty of applying it for the cure of his patients—without the natural aptitude and acquired skill necessary for applying his knowledge a man might be scientific, but could not properly be called a scientific *physician*. His degree makes him a Doctor of Medicine, but not necessarily a physician; "A person skilled in physic or the art of healing." (Webster.)

The scientific physician uses water of different degrees of temperature for the relief of various ailments, but he is not a hydropath; he makes use of electrical currents of different degrees of tension and potency for the treatment of such ailments as experience shows to be benefited by electrical treatment, but he is not an electropath; he uses alkalies to neutralize acids and cold baths to reduce febrile heat, but he is not an allopath; he rubs a frozen nose with snow and gives atropia in opium poisoning, but he is not a homeopath. In short, he disclaims being any kind of a path.[1] And in his name I protest against his being called an "old school" doctor. If there is anything newer in medicine than the recent important additions to our knowledge of the causes of disease, and to the means of diagnosis and methods of treatment which have been made within the ranks of the profession during the past fifteen or twenty years I have not heard of it. It is somewhat embarrassing for a recent graduate, who has been working hard for four years to acquire a knowledge of medicine in all its branches, to be asked by a well-meaning friend whether he is an old school doctor. He should answer that he belongs to the new school of scientific medicine. One of the leading features in this new school of medicine is the scientific spirit which asks in regard to everything, "Is it so?" and declines to accept an affirmative answer until an experimental demonstration of the fact has been made. In the absence of such demonstration the scientific physician says: "It may be so," "It does not appear probable," or "I don't know whether it is so or not." This unwillingness to assert that a thing is true in the absence of proof is a result of the kind of training which scientific men receive in laboratories, where everything is put to the test of experiment. No doubt the physician who is thoroughly imbued with this scientific spirit is, to a certain extent, at a disadvantage when he begins to practice his profession. To say "I don't know" requires considerable courage, especially on the part of a young doctor when the questioner expects to receive information and is willing to pay for it. The unthinking and unscientific are very ready to believe that not knowing is due to ignorance on the part of the individual, when, in reality, it is the brief statement by a well-informed man that the matter referred to has not been determined and that no one can give the desired information. Under the same circumstances an ignoramus or a charlatan, instead of confessing ignorance, would perhaps gain great credit by a positive assertion with reference to a matter of which he could not possibly know anything. But science teaches that a confession of ignorance is the first step toward the attainment of knowledge. When the anxious mother says: "Doctor, is it diphtheria?" and receives the answer, "I don't know; there is a somewhat suspicious deposit upon the tonsils and I will at once make a microscopic examination and a culture which will enable me to determine the matter within twenty-four hours," she will probably not be as well satisfied with her medical attend-

[1] There have been several recent additions to the list of *'paths*. We have osteopaths, biopaths and vitapaths, etc. In a western city, in June last, a coroner's investigation resulted in the finding that the death of a certain individual was due to the effects of drugs ignorantly administered by one Campbell, who claimed to be a professor in a "Vitapathic" college. In imposing sentence Judge Dustin said:

"Men who knowingly go into a sick room and prevent anything being done for a dying man, by silly incantations and laying on of hands are reponsible for his death and ought to be on a par with a murderer in the eyes of the law. God help the dying man who relies upon you or any of the so-called graduates of this quackery. You speak of vitapathy being of a higher power than medicine, and you say you ordain ministers at the same time you matriculate vitapathic physicians. Your methods are an insult to intelligence; their practice is a criminal abuse of ignorance and your college a disgrace to civilization."

ant when she receives the assurance, after such an examination, that "it is not diphtheria," as she would have been with the non-scientific doctor who claims to recognize diphtheria at a glance, announces his diagnosis at once and "cures" the patient within a day or two. The latter has earned the mother's lasting gratitude and she will not fail to recommend him to her friends as competent to cure any ailment to which humanity is liable. But our scientific doctor will make his way in the end. He will enjoy the confidence of his fellow-practitioners and his patients will learn after a time that when he says he knows a certain thing he really knows it, and when he says he don't know, he will do his best to find out, if the question can be solved by reference to the medical works in his library, or by an experimental investigation which it is practicable for him to make personally, or which can be made for him in a laboratory devoted to scientific research. He does not make a snap judgment but waits until all the evidence is in. It is evident that the opinion of a man of this type is of value. His diagnosis, his prognosis and his advice as to treatment are based upon a careful investigation of the case in hand, a full knowledge of the literature relating to similar cases, and a precise appreciation of the indications to be met by the treatment prescribed.

The conservatism which makes the scientific physician willing to confess ignorance is a very different conservatism from that of the pretentious charlatan and quack who gives an emphatic denial to facts that are well established, upon evidence with which he is not familiar or which his intellect is not capable of appreciating. I have protested against calling the graduates of our leading medical colleges "old school doctors," but it must be admitted that there are still some very old school doctors among the former graduates of regular medical colleges. In the ranks of the medical profession, as elsewhere, there are men who have been left behind in the rapid development of our knowledge, and who protest against the acceptance of facts which have been established by the most unimpeachable experimental evidence. By such protest they simply reveal their own ignorance. But as their opinions are often stated in good and forcible English, other persons, equally ignorant of the evidence, frequently accept them, or quote the old saying: "When doctors disagree who shall decide."

As examples of this conservatism of ignorance, I submit the following quotations from two recently published papers, having the names of regular graduates in medicine attached to them. In a report to a State medical society signed by a reputable physician, among other conclusions formulated, I find the following:

"2. That the etiology of infectious diseases is as yet *sub judice*, and that therapeutic methods based upon the assumption that infectious diseases are caused by specific microörganisms are unscientific."

Another medical writer concludes a popular magazine article as follows:

"We are brought, therefore, to this conclusion inevitably: the germ theory is an assumption of causes, of the existence of which we have no evidence, to account for effects which they by no means explain."

The training which the medical student of the present day receives in the laboratory is essential for other reasons than because of the scientific spirit which is developed by personal verification of the facts which are recorded in his text-books of chemistry, histology, bacteriology, etc. Not only does this personal verification impress the facts upon his memory, but he obtains that technical skill in the use of instruments and methods which can only be acquired by practice. In the chemic laboratory he learns to detect poisons, to determine the nature of impurities in water or air, to examine urine, etc. His practical course in histology makes him familiar with the use of the microscope and with the minute anatomy of healthy tissues. In the pathologic laboratory he learns to recognize the results of different morbid processes and the presence of parasitic microörganisms in the blood or tissues, to distinguish between malignant and innocent growths, etc. By cultivating the principal pathogenic bacteria, and examining them under the microscope after treatment with various staining agents, he becomes familiar with their biologic and morphologic characters and is able to recognize them wherever they may be encountered. In short, he obtains a practical knowledge of many things which it is essential for him to know, in order that he may be a skillful physician. The knowledge to be obtained from books, which enables the student to pass a creditable examination, does not make him a chemist, a pathologist, a skilful diagnostician, a surgeon or a physician, any more than the knowledge to be obtained by reading books on agriculture makes a man a farmer, or than the study of books on navigation would enable a man without practical experience to take command of a trans-Atlantic steamer. It is in recognition of this fact that the Medical Faculty of the University of Georgetown has, as already stated, decided to extend the hours of instruction "so that more time may be given to practical work in laboratories and hospitals." Every physician of experience will approve of this decision. It is true, that but few of the prominent physicians of the present day enjoyed such advantages as it is proposed to give to their successors. It is also true, that a majority of these prominent physicians were very imperfectly prepared for the duties and responsibilities of a general practitioner when they received their medical degree. This fact has long been recognized within the ranks of the profession, and it is for this reason that hospital appointments have been so eagerly sought by those having a proper professional ambition. In the hospital, the young doctor learns to apply his knowledge and to meet emergencies with composure and professional skill. His books have taught him what to look for, what to listen for and what to feel for, but practice alone can give him the trained eye, the trained ear and the *tactus eruditus* of the accomplished physician.

In the "Circular of Information" already referred to, I find the following announcement:

"A laboratory course in bacteriology will be given, which will continue over one-half of the session. This will consist of bacteriologic technique, and the study and diagnosis of diseases which are caused by microörganisms.

"The student will also be given opportunities to observe and investigate special problems in clinical diagnosis, disinfection, etc.

"The laboratory course is obligatory."

I am especially pleased with the last clause of the quotation just read. "The laboratory course is obligatory." And I trust that this applies to all of the laboratory courses. For I am convinced that these

constitute an essential part of the practical training of the scientific physician. It is in the laboratory that the student acquires deftness in delicate manipulations required in his chemic, histologic and bacteriologic studies; here he learns to measure with accuracy, to appreciate the slight differences in color reaction, in form or in structure, upon which he must often depend for the recognition of toxic agents, pathogenic germs or abnormal growths; his eye becomes trained to recognize the malarial plasmodium, the tubercle bacillus and other microörganisms which are only revealed to us by the highest powers of the microscope, under proper illumination, and in skillfully mounted preparations; and it is here that conditions are most favorable for the development of that spirit of doubt and inquiry which is so essential for the progress of scientific medicine. Where there is no doubt, there will be no investigation. The farmer who accepts the traditional belief that certain seed must be planted in the light of the moon, in order to obtain the best results would consider it a waste of time to make a comparative experiment. But it is by means of comparative experiments that we arrive at definite conclusions in the laboratory, and the great diversity of opinions with reference to the curative action of drugs is largely due to a failure to apply the same methods in practice. This failure has been partly due to want of appreciation of the necessity for a control experiment in judging of the results supposed to follow a certain course of treatment, and partly to the difficulty of making such a control experiment in clinical medicine. The unscientific mind jumps at conclusions that are entirely unjustified by the facts. The warts upon the child's hand are rubbed with a piece of meat which is thrown over the left shoulder, etc., and they subsequently disappear; a horse chestnut or a potato is carried in the pocket for years and the individual does not suffer from rheumatism during the entire time. The child has a high fever at bed time, the mother gives it a sugar pill and the next morning the fever has entirely disappeared, and so on, *ad infinitum*. *Post hoc ergo propter hoc*. But the man of science asks, What would have happened if the warts had not been rubbed with meat, or saliva, or whatever may have been the particular fetich employed? Would the man have had rheumatism if he had left the horse chestnut on the tree or the potato in the ground? Would the child's fever have disappeared if the mother had failed to give it the sugar pill? To determine this, a comparative experiment is evidently required. Take the case of the child, for example. To determine whether the disappearance of the fever was in fact due to the administration of the sugar pill, we should have another exactly similar case—a child of the same age, under similar conditions and suffering from an elevation of temperature due to the same cause. One child should have the pill and the other should have nothing. Even then, the result would not be conclusive. Science demands that the experiment should be repeated several times. There are so many chances that the conditions may not, after all, have been exactly identical. No truly scientific man would venture to announce a fact as established upon the basis of a single successful experiment. And, having in view the fallibility of human judgment, the tendency to draw conclusions favorable to the prejudices or desires of the individual, and the frequency with which erroneous conclusions are published upon what appears to be a substantial experimental basis, science demands verification of reported results by two or more independent investigators before finally accepting these results as demonstrated facts. All this is so far away from the ordinary methods of arriving at conclusions that the conservatism of the scientific physician meets with little sympathy on the part of the general public. The man with a horse chestnut in his pocket is not only convinced by his individual experience that this is a sovereign cure for rheumatism, but he is apt to resent your non-acceptance of his experiment as conclusive. We, on the other hand, know that medical literature abounds in instances of the ultimate failure of therapeutic agents and methods of treatment which have for a time been lauded as specific and have been indorsed by prominent physicians. We are therefore becoming more and more exacting in our demands as regards proof, and, as a result, medical science is making rapid progress. How great this progress has been is not fully appreciated by the non-medical public.

While we justly pride ourselves upon the rapid development of our knowledge during the last half of the present century we must not forget that, in some directions, the foundations of scientific medicine were substantially laid by the illustrious physicians of the past. The time at my disposal will not permit me to give an extended review of the development of medical knowledge, but a brief reference to some of the more important events which have marked this progress will perhaps be useful, as showing the extent of the field and the advantages which the physician of to-day has over his predecessors.

Hippocrates and his illustrious successors Celsus, Galen and others, were certainly the peers of modern physicians in their powers of observation, and we are indebted to them for a mass of recorded facts relating to disease which have been verified and added to by subsequent observers. But observation, in the absence of the instruments and methods of modern science, goes but a short distance in the direction of unveiling truth, and often leads to erroneous conclusions. Observation led the ancient philosophers to believe that the sun goes around the earth and that water and air are elements. The experimental methods of modern science have revealed to us the constant presence of three elementary gases in the atmosphere, one of which is also a constituent of water, while one—argon—has only just been revealed to us by the researches of Professor Ramsey and Lord Rayleigh. One of the first lessons to be learned by the student of medicine is not to trust implicitly to the evidence of his senses. This is the fundamental error of ignorant persons and the foundation of demonology, and superstitions of all kinds. The eye tells us that water from the well is perfectly pure, but the microscope shows us that it swarms with living organisms. The touch tells us that the patient has a high fever, but the clinical thermometer says, no—the sensation received was due to the comparatively low temperature of our own hand at the time of making the observation, etc., etc.

The anatomic knowledge of "the father of medicine" was very imperfect, because it was not obtained by the dissection of the human body. The Greek physicians Herophilus and Erasistratus, of the Alexandrian school of medicine, who lived about 300 B. C., are believed to have been the first to study

anatomy in this way, and from that time our knowledge in this essential department of medicine has steadily increased until, at present, it is perhaps more nearly complete than in any other branch. The medical student of to-day is expected not only to acquire an accurate knowledge of anatomy in the dissecting room, but he must study the minute anatomy of the tissues by means of the microscope and the methods of investigation which he will learn in the histologic laboratory. He is also expected to have at least an outline knowledge of comparative anatomy, a branch of scientific research which dates back to the time of Aristotle (384 B. C.), and which has been greatly developed during the present century. Our knowledge of minute anatomy has been largely acquired during the past sixty years, as a result of the improvements in the compound microscope made about 1830. The perfecting of this invaluable instrument of research has also led to vast additions to our knowledge in the department of general biology, of which it is important that the medical student should possess at least an outline. A knowledge of the structure and development of lower organisms is justly regarded as a proper introduction to the study of human anatomy and physiology. Embryology, a branch of science which may almost be said to have had its birth in the present century, must not be neglected by the student of medicine. It is true that Galen made observations upon the development of the incubated egg, and that Harvey, in the seventeenth century, made some important observations in the same line of investigation, but the minute and accurate knowledge of the present day depends upon the comparatively recent improvements in the compound microscope just referred to.

Progress in physiology, as in other branches of medical science, has resulted from the application of the experimental method to the problems to be solved. Galen made an important addition to human knowledge when he demonstrated that urine is secreted by the kidneys, a fact which, apparent as it seems to us to be, had not previously been recognized. It was nearly fifteen hundred years later that Harvey (1628) demonstrated the circulation of the blood, a discovery which is justly considered one of the most notable events in the history of medicine. The subsequent explanation of the process of respiration by Lavoisier (1783), the experiments upon gastric digestion by Beaumont (1834), and the discovery of the function of the vasomotor nervous system by Claude Bernard, opened the way to a fertile field of research which is still being vigorously prosecuted in physiologic laboratories; and the results attained constitute an essential part of a medical education. The progress of our knowledge of physiology has necessarily been secondary to the advancement of chemistry. Indeed, physics and chemistry constitute the foundation of medical science. We therefore place Priestley's discovery of oxygen (1783) among the epoch-making events in the history of medicine. It is due to chemistry that we are able to use the active principles of various drugs of demonstrated value, instead of the crude material—leaf, root, or bark; and the chemists have recently made many valuable additions to the list of approved therapeutic agents—principally from the series of coal-tar products.

The importance of carefully studying the results of morbid processes in the post-mortem room and in the pathologic laboratory is now generally recognized, and the medical student will find that since Morgagni (1682-1771) led the way in the study of morbid anatomy, an enormous amount of work has been done in this field of investigation. He will be required to make himself familiar not only with the facts developed, but with the methods of research and the microscopic and gross appearances of tissues which have undergone the changes due to disease. Important as these studies are, the results obtained, from a practical point of view, are eclipsed by the brilliant discoveries which have been made during the past twenty years with reference to the etiology of infectious diseases, which to a considerable extent have been prosecuted in laboratories devoted to pathologic research. These discoveries, like others heretofore referred to, depend primarily upon the improvements which have been made in the compound microscope, especially in high power objectives and means of illumination; and upon methods of research devised by the pioneers in this field of investigation, among whom the names of the French chemist Pasteur, and the German physician Koch are preëminent.

The development of our knowledge relating to the bacteria dates from the controversy relating to spontaneous generation, which was finally settled by the experimental demonstration made by Pasteur (1860), that no development of microörganisms occur in organic infusions which have been sterilized by boiling; and that fermentation and putrefaction depend upon the introduction of living germs into such infusions. The distinguished French physician Davaine, first demonstrated the etiologic relation of a microörganism of this class to a specific infectious disease. The anthrax bacillus had been seen in the blood of animals dying from this disease by Pollender in 1849 and by Davaine himself in 1851, but it was not until 1863 that the last named observer felt himself justified in asserting, as a result of inoculation experiments, that the bacillus was the essential etiologic factor in the production of anthrax.

In 1873 the German physician Obermeyer, discovered the spirillum of relapsing fever in the blood of patients suffering from that disease. The typhoid bacillus was discovered by Eberth and independently by Koch in 1880. The same year the present speaker discovered the pathogenic micrococcus which is now recognized as the cause of croupous pneumonia. In 1882 Koch published his discovery of the tubercle bacillus. The glanders bacillus was discovered by Löffler and Schütz in 1882; the bacillus of diphtheria by Löffler in 1884; the bacillus of tetanus by Nicolaier in the same year. It was also in this eventful year that Koch published the discovery of the cholera spirillum. Since these important discoveries our knowledge of the pathogenic bacteria has rapidly increased, and it is now demonstrated that erysipelas, septicemia, puerperal fever, wound infections, boils and abscesses, peritonitis, pleurisy, etc., are due to general or local infection with germs of this class.

Evidently the medical student of the present day must be made familiar with these recent additions to our knowledge of disease, and his acquaintance with these microscopic foes of the human race should be of that practical character which can only be obtained in the laboratory.

I have already occupied so much time that I can refer but briefly to the advancement in clinical medicine, which depends largely upon additions to our

knowledge already referred to. The use of the stethoscope, the clinical thermometer, the laryngoscope, the ophthalmoscope and other aids to diagnosis has introduced certainty in place of uncertainty, science in place of guesswork. Our knowledge of the pathogenic bacteria tells us not only where to find them, but how to destroy them when they are accessible to the action of physical or chemical agents. This knowledge has undoubtedly resulted in the saving of thousands of valuable lives. This has been accomplished by means of antiseptic or aseptic methods in surgical and obstetrical practice and by the intelligent use of disinfectants for the destruction of infectious material wherever it may be found. As a result of such procedures we have during recent years escaped any devastating epidemic of cholera or yellow fever, although the first mentioned disease has twice been introduced into the harbor of our principal seaport, and yellow fever prevails annually in the cities of Havana and Vera Cruz, with which we have close commercial relations.

The medical student is expected to prepare himself for continuing the work of his predecessors in preventive medicine, although this work has a constant tendency to diminish the demand for his services. To the credit of our profession be it said that this selfish point of view has never controlled its action, and it is largely to the efforts of physicians that existing laws and regulations have been enacted for the prevention of the extension of infectious diseases, the maintenance of a pure water supply for towns and cities, and the general sanitary supervision exercised by local and State boards of health.

The most notable additions to our therapeutic resources are the antitoxins of diphtheria and tetanus, and the use of thyroid extract for the cure of myxedema. But I can not dwell upon the possibilities in the way of specific medication which are suggested by these recent achievements of scientific medicine. Certainly I have said enough to indicate to the young man who contemplates entering upon the study of medicine that his best energies will be needed to master all the important details in the various branches to which reference has been made; and to justify the Medical Faculty of the University of Georgetown in extending the hours for instruction and in requiring that students shall take the practical laboratory courses which have been arranged for, as announced in the recent Circular of Information already referred to.

Having attempted to give you some idea of the present status of scientific medicine, I desire briefly to call your attention to certain matters which are extremely discouraging for the truly scientific physician although he seldom refers to them, and, perhaps wisely, trusts to time and the diffusion of knowledge to remedy the evils to which I shall refer:

Hand in hand with the progress of medical science we see an army of pseudo-scientific quacks who trade upon the imperfect knowledge of the masses, and by plausibly written advertisements convince many, even of the educated classes, that their particular method of treatment is based upon the latest scientific discoveries. A Priestley discovers oxygen; the physiologists show that this gas is essential to life and that the maintenance of a full degree of vital activity depends upon the possession of healthy lungs of ample capacity and the respiration of pure air; the scientific physician discovers defects in the respiratory apparatus, and under certain circumstances prescribes oxygen for the relief of symptoms resulting from a deficient supply of this life-sustaining gas. But the pseudo-scientist extols oxygen as a cure-all for pulmonary complaints, or invents an apparatus which may be held in the hand or carried in the pocket by which oxygen will be absorbed in some mysterious way, and without difficulty obtains numerous certificates as to the marvelous cures effected by his method. A Franklin draws lightning from the clouds, a Galvani shows that an electrical current may be developed by the contact of metals and that such a current causes muscular contraction; and innumerable patient investigators add to our knowledge of electricity. The scientific physician avails himself of this potent agent for the treatment of certain ailments in which it appears to be indicated, but admits that he meets with many disappointments in his clinical experiments. The pseudo-scientific quack writes, or has written, advertisements in which fact and fiction are so commingled that even educated persons may be deceived, and having aroused interest in the alleged therapeutic value of this mysterious agent, offers his electric belt, or finger-ring made of two metals, or pocket battery as a sure cure for certain specified ailments, or, if less modest and more certain of the credulity of the public, as a cure for all of the diseases to which man is subject.

Again, a Pasteur proves that the disease of sheep and cattle known as anthrax is due to a microscopic organism found in the blood, an Obermeyer discovers a different microörganism in the blood of relapsing fever patients, and numerous patient workers in laboratories rapidly add to our knowledge of pathogenic bacteria. Then comes the man with the microbe killer. He tells you that all diseases are due to germs in the blood and that his fluid kills them without fail. Science has demonstrated that comparatively few of the infectious diseases of man are due to the presence of pathogenic bacteria in the blood, and that the microbe killer has but very little germicidal value; but a credulous public accepts the interested statements which appear to have a scientific basis, and swallows the microbe killer with impunity if not with benefit. And so it goes. Science establishes the value of the thyroid extract for the cure of myxedema, and immediately the public are called upon to swallow extracts of brain for cerebral trouble, of heart for cardiac disease, etc. Even the Chinese pulse-doctors obtain a large clientèle on the Pacific coast. Their solemn looks and pretentious claims impose upon the ignorant and it is said that even educated people not infrequently consult them. It is true that in China, as elsewhere, there are two classes of physicians. Those who are educated and who are familiar with the medical classics of their country, and the itinerant quacks who are not only ignorant but unprincipled. No doubt the regular practitioner in China believes in his own pseudo-science. According to a recent author:[1] "The learned Chinese doctor is not ignorant in the sense that he has not studied, as from early youth he has been subjected to a degree of cramming and of learning by rote, such as would discourage and wear out the less patient and less toiling Caucasian. He has been obliged to learn stacks of sacred precepts taken from their most ancient sages, and the admixture of intricate and bewildering astronomy, meteorologic signs, and the

[1] Dr. P. C. Remondino, of San Diego, Cal.

endless physical complication of concurrent signs, appearances and detached disturbances that he has been compelled to learn by heart is simply appalling. Anatomy and physiology cut no figure in these studies and they are considered unnecessary, as disease is a matter depending on good or bad vapors, and is of either divine or diabolical origin. In spite of their most elaborate treatises upon the pulse, from which they profess to be able to perform the most skillful diagnoses, they are even unacquainted with the existence of the circulation."

The time at my disposal will only admit of a brief reference to the Chinese theories relating to disease and its treatment. As was the custom among the more enlightened occidental nations, until a comparatively recent period, their prescriptions often contain twenty or more ingredients, apparently given with a vague idea that one out of the number may prove to be the right remedy. These ingredients are obtained from all imaginable sources and include all kinds of nastiness, in the way of excretions, desiccated animal tissues, etc. With them, the color of a medicine is an essential character; red medicines being suitable for diseases of the heart, white for pulmonary complaints, black for diseases of the kidneys, green for those of the liver, and yellow for those of the stomach. In the use of remedies from the vegetable kingdom, the leaves and branches are most appropriate for diseases of the extremities, the bark should be used for skin diseases, the pith for derangements of internal parts of the body, etc.

In conclusion, I desire to emphasize the fact that learning does not enable a man to distinguish between science and pseudo-science. The learned disciples of Confucius in the Orient, and classical scholars of the pre-scientific epoch in occidental countries, failed to distinguish between the facts of astronomy and the fancies of astrology. And, at the present day, eminence as a classical scholar, or as a theologian, or as a jurist, or as a metaphysician, in the absence of a knowledge of the methods and results of modern scientific investigation, does not enable a man to distinguish between science and pseudo-science in medical practice. This kind of learning is therefore not essential for the physician; but, as we insisted at the outset, he should not enter upon the study of medicine without having, at least, a thorough knowledge of his own language and of those branches of study pursued in the high schools of our large cities; we now add that a reading knowledge of the French and German will be very desirable if he wishes to keep entirely *au courant* with the progress of medical science.

The Angels of the Ambulance.—Mrs. Margaret Sangster has contributed to *Harper's Weekly* the following stanzas concerning the young medical "angels" of our cities ambulances:

"I never see in our bustling town,
Where the midsummer sun pours fiercely down,
The swift onrush of the ambulance
But I think of the blessed countenance
Of One who walked by lane and field,
And with voice and look the suffering healed.
Still, where the city's woes are thick,
The dear Christ-spirit heals the sick.
And yet He lives in the hearts of men,
And sends His angels with speed again
Wherever the weary plod and fall,
His care and tenderness over all.

"And the angels carry lint and lance.
And drive in the city's ambulance:
Are bluff of speech and deft of hand,
And quick with accents of command;
And the wind of their coming clears the way
For a breath of heaven in the darkest day."

ORIGINAL ARTICLES.

WHAT THE PATIENT EXPECTS, AND WHAT WE ARE ABLE TO DO, IN CHRONIC CATARRH OF THE TYMPANUM OR MIDDLE EAR, WITH DEAFNESS.

Read in the Section on Laryngology and Otology, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY LAURENCE TURNBULL, M.D., PH.G.

Aural Surgeon to the Jefferson Medical College Hospital; President of the Sub-Section of Otology of the British Medical Association, and the Section on Laryngology and Otology of the AMERICAN MEDICAL ASSOCIATION; Emeritus Physician to the Department of Otology of the Howard Hospital; Member and one of the Committee of the International Congress of Otology.

PHILADELPHIA.

In the treatment of all chronic diseases of from six months' to as many years' duration, the prognosis, or what we are able to do, depends upon many factors. The first, as a rule, is the duration; the second is if the case is functional; the third, if organic, it is incurable. This not only applies to the ears but to the lungs, liver, kidneys, eyes and brain.

Can we improve them? We can, if the disease is functional and not organic. When the patient with organic disease of the lungs applies, not for a cure, but for relief, we frequently are able to diminish the cough and expectoration, build up the general health, and by changing the habits and climate, improve the case. So also with the liver, kidneys and brain. In the case of the eye, sometimes by a skillful and delicate treatment or an operation we are able to give one-sixth, one-eighth, one-fourth or even one-half the amount of vision, by which, with the assistance of glasses properly fitted, the patient is able to make his way alone, and even to read and work. This slight improvement is almost always accepted with cheerfulness and even gratitude. The most unreasonable of all patients to be treated, both in public and private, are the deaf. They come to the aural surgeon and expect a *cure*, not relief—and the general public and the quack encourage them in this demand. Many of them come with varying deafness, from *nil*, to hearing the ordinary watch close to the ear, and when by prolonged treatment, they are able to hear from ten to twelve inches, or more, also one person's conversation, or, by the aid of the trumpet, ordinary conversation, they are never thankful, but state that So-and-So was cured of deafness, not knowing that in our list of diseases of the ear causing deafness there are hundreds of cases from cerumen or ear wax, resting on the drum membrane, or a slight catarrh in the nose, throat or Eustachian tube, to disease involving the internal ear, auditory nerve or brain. There are also a number of inherited diseases of the ear and those contracted by impure habits, which cause most profound deafness never to be cured when of long duration. Then there is accompanying these forms of deafness, constant and persistent noises termed tinnitus aurium, or ringing sound, which as a rule is absolutely incurable after months of careful treatment. This tormenting, distressing condition which is only a symptom of a deeper form of the diseased ear, causes great unhappiness in the individual. This class of patients is of a very jealous disposition, ready to quarrel even with their best friends; they also imagine without cause that persons are talking about them, stating something wrong because they do not hear. With the assistance of certain medicines, and true desire on their

part, these sounds may be ameliorated, and if the patient is willing to aid the physician, not permitting the mind to dwell upon them, great comfort may be received. If, instead of this effort on their own behalf, and a willingness to follow the counsel of their friends, and aural surgeon, they become morbid and irritable, keeping by themselves, avoiding all pleasant company and amusements which could be had by the aid of the hearing trumpet, or still better, hearing with their eyes, these noises will sometimes become unbearable and a form of insanity ensues, and in some very rare cases in an insane moment of desperation they commit suicide. That is the reason why they should avoid the causes which increase it. This is no fancy sketch, but sober truth. No wonder the aural surgeon is pleased to be able by various operations to endeavor to relieve them from this dreadful form of disease, as well as aural vertigo, in which the patient is liable to fall forward, or sometimes backward at the risk of life.

ILLUSTRATIVE CASES.

These cases will be selected mostly from our own observations, and one from our colleague, Dr. MacCuen Smith; the histories being brought up to the month of May, 1895:

Case 1.—M. K., a lady of refinement and education, aged 40, having met with reverses had to resort to a manufacturing establishment for a living. She suffered for years with chronic aural catarrh (dry) never having had any discharge, with chronic rhinitis and progressive deafness, which entirely unfitted her for performing her duties. In spite of the usual treatment for years, she was so deaf that she was desirous of an operation, hoping thereby to obtain relief. She was taken to Jefferson Medical College Hospital Feb. 6, 1891. For twenty-four hours she was placed under very limited diet, with gentle purgatives and kept at rest in bed. On the morning of the operation she had a very light breakfast. (The urine had been tested for albumin and a careful examination made of the heart, both of which were found in normal condition.) The chief surgical resident administered the anesthetic, ether, of which she took a considerable quantity without going under its influence. Finding this to be the case, chloroform was administered with care and the ether withdrawn. This agent acted very promptly, but on examination of her pulse it had ceased to beat. The chloroform was withdrawn and efforts were made at resuscitation, with artificial respiration, with depression of the head and elevation of the lower extremities; after a time the pulse returned and the operation of removal of the ossicles was successfully performed. She had some vomiting which was not excessive, as she had taken internally a few doses of solution of cocain, and sulphate of strychnin. The parts were cleaned with iodoform cotton, and the ear carefully packed and not disturbed for twenty-four hours, then the cotton was replaced. The ear was covered with a large mass of absorbent cotton, and a bandage applied. No food was given until the stomach was quiet, and all noises were avoided, as even walking across the room was painful to her.

The blood was carefully mopped up, and soon the ear became dry. No wash of any kind was used, and in the course of one week she was allowed to sit up and permitted to go home, though she continued coming to the writer's office to have the ear dressed. The membrane which had been removed was soon restored by pseudo membrane and was prevented from adhering to the promontory by keeping the Eustachian tube free, by the use of Politzer's douche, and the vapor of ether.

The restoration of her hearing was most successful for general conversation at about five feet. She was able to resume her daily duties, putting up medical preparations, and to receiving orders even in a moderately loud voice, and heard an 18–36 inch watch about half the normal distance. It is now three years since the operation and the patient has been exposed to all sorts of weather, having to travel at least a mile to her work at the establishment through one of the coldest winters of many seasons. She only came a few times to the office to have removed some slight accumulations of a light color, and to have her nose and pharynx cleansed with antiseptic sprays and the Eustachian tube kept open.

Case 2.—Operation for the Relief of Deafness and Vertigo.—M. H. F., aged 45; a lady of wealth and refinement, had been deaf ever since she was very young, and she stated this was the result of scarification of the tympanic membrane by the physician who first had her case in charge. She had suffered with a diseased throat, with a deviation of the septum very high, and enlarged glands. She takes cold easily and suddenly, the swelling of the throat and nose being very great, followed by intense deafness. She had been under the treatment of several laryngologists, electricians and aurists, but only with temporary benefit.

On examination there was found in the right ear, thickening of the membrana tympani, the handle attached to the promontory, and the whole malleus twisted on its axis; Eustachian tubes patulous; H. D. watch pressed on contact. Tuning fork full C; auditory nerve normal; bone conduction good. Excessive tinnitus and vertigo. The left ear was in similar condition. The operation was performed, chloroform and ether being used, Feb. 5, 1892. The malleo-incudal joint was firmly ankylosed. The membrana tympani, the malleus and the incus were removed. The operation was attended with some difficulty on account of the hemorrhage. Hearing was improved after the operation; and the tinnitus had decreased.

June, 1893, hearing continued; a new membrane had formed and the hearing in that ear had become defective after a time. The membrane was incised but the hearing was not what was desired, and a few months later the other ear was operated upon, when she was able to hear ordinary conversation, to give orders, and to attend to shopping and all outdoor work. She could then hear her own watch four inches off, and even a clock in the opposite room.

One of the most distressing symptoms which this patient suffered from, was intense vertigo so that she would fall back without notice, and she was afraid all the time that this would happen on the stairs. The operation relieved the vertigo, but did not entirely the roaring tinnitus, which was caused in part from mucus in the orifice of the Eustachian tubes and from the diseased nose, in spite of careful treatment.

In a note received October, 1894, two years and a half after the operation, she wrote: "I can get about very well in the stores. I have not the least trouble and always understand what is said, for those who are not deaf raise the voice on account of the street noises so that I have little difficulty to understand all that is said, but when it is quiet, there is my trouble."

Even when writing this, she was suffering from an acute nose and throat catarrh, for she adds: "I wish I had some of those benzoate of soda tablets which I took before, when my breath, nose and throat were out of order; they acted well with my stomach." (The same catarrhal condition.)

The great improvement which followed the operation on the left ear she stated continued, but the right side filled up at times so as to require the application to the nose and throat of a spray and exhauster, and even the galvanic current, which for the time caused a slight return of the dizziness, but which soon passed away with improvement of hearing.

This patient stated in another note, that her hearing always improved when she could breathe salt air, and that the tinnitus and deafness were brought on by constant worry. This the doctor can not always prevent, but can aid in change, and removal of the cause. We feel, as physicians, we can do much to ameliorate the condition of the nervous system. In another place she writes: "Your patient still hopes for a better time coming," and again, "Your patient is not of an unhappy disposition, but under ordinary circumstances would be bright and happy."

These peculiar physiologic and psychologic matters have, as aural surgeons and physicians know,

much to do with both deafness and the peculiar noises which are heard by certain classes of nervous or neurotic patients, and we must be physicians of the mind as well as of the body.

Case 3.—A Case of great Relief to Tinnitus Aurium.—H. M., aged 24, a student of medicine, has been a sufferer with chronic middle ear catarrh and tinnitus aurium with, first, acute and subsequent chronic rhinitis. He was in the office and studied with a distinguished throat and ear specialist, and was treated with great care, still his suffering was so great that it interfered with his studies. His nervous system was very impressionable to all kinds of drugs, and he had employed every means of relief, even to the freezing by ether and rhigolene over the mastoid, etc. He made up his mind to have an operation performed. He was not willing to go to bed, but was operated on in a laryngological chair at the Jefferson Medical College Hospital, August, 1893. The local anesthetic was a 10 per cent. ointment of cocain which had been applied to the drum membrane the night before, and early morning of the operation. The malleus was removed with a portion of the membrane, so that access was had to the incus and stapes. Mobilization was then employed, and after a few days when the parts were healed he experienced considerable relief from the noises. He did not desire any other operation as his hearing was not very defective on that side.

DR. MACCUEN SMITH'S CASE OF OPERATION FOR DEAFNESS, PAIN AND VERTIGO.

Mrs. H. G., aged 42 years; N. J., twelve years ago was treated for severe tinnitus in both ears for a continuous period of two years, which, however, failed to be improved; at times the noises were more intense. At the expiration of these two years, the hearing (which had been gradually growing dull) suddenly became much worse. Accompanying this unexpected impairment of hearing was an attack of vertigo that has continued at intervals ever since, about seven years. The hearing power in this time has become greatly impaired. For the past four years she has suffered periodic pain in the right ear, sometimes being very acute, and it would last for one or two days. It is needless to say that this patient consulted various authorities, but no permanent benefit was derived. In June, 1892, when she consulted us, the membrana tympani was found, R. E., chronically inflamed and firmly adherent to the promontory; could hear only loud conversation at fourteen inches; watch and fork were audible only on contact; bone conduction was normal. Has never had any discharge. On account of the increasing tinnitus, vertigo and pain, the patient refused any line of treatment except operative, and we could see no good reason why we should extend any hope for relief by following in a line of non-operative treatment that had failed in the hands of several competent physicians.

June 6 we excised the membrana tympani, malleus and incus, and packed the cavity with iodoform gauze. In three days this packing was renewed, at which time the pain was entirely relieved; the hearing was improved somewhat, although the vertigo continued. Two weeks after the operation the hearing was markedly benefited, the pain did not return, and the vertigo somewhat improved. In this condition she left the hospital, and I did not see her again for three months. Reports her health very good, hearing about two-thirds normal, pain and vertigo both relieved. Have seen the patient at intervals for two and a half years after the operation, and the above improved condition has continued uninterruptedly.

These three cases, with the one by Dr. Smith, which could have been increased by many others, cover the good results of the operations in *pain, deafness, vertigo and tinnitus aurium.*

255 South 17th Street.

The *Lancet-Clinic*, of Cincinnati, calls on the Ohio doctors to defeat at the next election all of those candidates for re-election to the Legislature who refuse to vote for a medical bill, and those who voted against it. We agree with our contemporary that it is quite time medical men understood everywhere the value of organization and the necessity for standing solidly together in those matters in which they have a common interest. The reason why the politicians have paid little attention to the profession is because the profession have paid no attention to the politicians. A sound thrashing occasionally would secure wholesome respect.

WHAT ARE THE CURATIVE EFFECTS OF PNEUMO- AND PHONO-MASSAGE ON THE MIDDLE AND INTERNAL EAR?

Read in the Section on Laryngology and Otology, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY LOUIS J. LAUTENBACH, M.D., PH.D.

PHILADELPHIA.

This paper which I have the pleasure of presenting to you, is but an effort to explain the results achieved by my method of employing ear massage. I first presented the subject of ear massage to the Pennsylvania Medical Society in May, 1894, and in two subsequent communications to the Philadelphia Medical Society, one in May, the other in September of the same year, still further outlined the method and its results.

Recalling for a moment the method and its use, you will remember that I employ it always through the external meatus by means of double or single ear tubes fitting tightly in the canal, and that I use either pneumo-phono or mixed massage. By pneumo-massage I mean the massage occasioned by the impact of a column of air thrown inwardly on the drum-head, or, where this is perforated or not present, into the middle ear, or else by the suction effect of a partial vacuum being created within the ear tubes—these air movements being unaccompanied by sound. Phono-massage refers to the carrying of sound of various pitches and volumes through the meatus to the drum-head and middle ear. By mixed massage, I refer to the carrying of the two kinds, phono and pneumo at the same time. Practically, pneumo-massage is always, to a greater or less extent, accompanied by some phono-massage, from the fact that the mechanical appliances producing it are always more or less noisy. My experience with these methods has been extensive and on the whole successful. Their relative value in each individual case is as yet not perfectly clear to me, but each it will be found has its special sphere of usefulness.

When we consider how difficult and inaccessible to treatment is the ear, we can but acknowledge that forms of treatment so easily applied as these, if found to exert any influence on this organ, must prove exceedingly valuable.

We will first consider the influence of pneumo-massage on the various ear structures, premising our remarks with the assertion that to a degree the phono-massage has a like effect, in addition to a direct action which it exerts on the ear nerves. By the application of pneumo-massage by my vacuum method, we occasion an outward motion of the drum-head, with a swing of the handle of the malleus and an outward movement of the entire chain of ossicles with a withdrawal of the stirrup from its close application to the oval window. By reason of this withdrawal, there is occasioned a movement of the labyrinthine fluids; in addition to this, the attenuation of the air of the middle ear exerts an outward drawing effect on the membrane of the round window, which in turn causes a disturbance of the labyrinthine fluids immediately within it. By this motion of the fluids the otoliths are thrown into action and excessive pressure within the semicircular canals and cochlea is temporarily overcome. In consequence of this, the pressure on the nerves is relieved and they

are given time to recuperate; at the same time the circulation is stimulated, and because of this general activity, effete products are removed and morbid changes controlled. The middle ear and all its various structures including the Eustachian tube are affected by the massage and participate in the renewal of these active circulatory changes.

Phono-massage occasions all the changes above mentioned, but in a minor degree only. However, in addition, it affects the ear nerve's function by sending a repeated or a continuous message over it—this latter method of using a continuous sound to stimulate a diseased ear nerve, I now rarely employ. The phono-massage resembles pneumo-massage in causing a to-and-fro movement of the ear-conducting apparatus, but the number of movements per minute is very great, depending upon the pitch of the sound, and the amplitude of motion is exceedingly small as compared with that produced by pneumo-massage. While this form affects the middle and internal ears, it affects also the auditory nerve, and if the sounds be not too long continued the effect on the nerve is apt to be good and a stimulation is produced, but if long continued or following too quickly, one wave upon another as in the use of high notes, or when too loud, the effect is apt to be harmful by exhausting the nerve substance or by tiring the nerve's central ganglion. The method which I most frequently employ—a combination of mild and regular pneumo-massage with mild phono-massage—affects the structures as above mentioned, and has, in my hands, proved the most advantageous. Under its influence you can observe the drum-head bulge outwardly, its circulation increase, and the hearing faculties improve, while often headaches and full, heavy and giddy feelings caused by pressure upon the labyrinth or from morbid ossicular adhesion or constriction of the blood vessels disappear. At the same time, the ear nerves begin to regain their full functional activity and there is a marked improvement in the hearing as tested by bone as well as by aerial conduction.

The results obtained by these methods on the internal ear have far exceeded my anticipations. Having been taught the hopelessness of the treatment of diseases of the internal ear, it has been a subject of great surprise and pleasure to find that by such methods even cases of extreme disease of this structure could be improved. I have now quite a number of patients who belong to the class ordinarily known as that of the deaf and dumb, where, by the most accurate and careful ear testing of which I have any knowledge—the phonographic method—not the slightest positive evidence could be obtained of the faintest trace of hearing. One of these cases, a boy aged sixteen months, after his third treatment could hear the sound made by turning the knob of the door, not seeing it opened. Another, a girl of 4 years, in whom I could not demonstrate the least vestige of hearing, has developed not only the power of hearing certain sounds, such as the creak of a spigot, the bark of a dog, the noise of a door knob's motion, but has in addition developed the power of imitating some sounds. When her father, in playing the violin, strikes the A string, she invariably imitates it, even when the instrument is not in sight. She also repeats the A note as it issues from an organ and when sung. This peculiarity of the ear becoming awakened first to certain tones, is most frequently explained on the supposition that the terminal ends of the nerves are in communication with its individual vibrating fiber, each fiber responding to but one tone and independent of each other as the keys of a piano, but that of these fibers, one or more as the case may be, is the most active, free and healthy and therefore the sooner responds to treatment. It can also be explained on the telephone theory of the production of the sensation of hearing. In the ordinary telephone we find that by increasing the external resistance we can blot out certain tones, and that by shortening the length of the wire or increasing its cross section, that these tones gradually appear more distinctly as the resistance is diminished. Applying the same thought to the ear, the remedial effect of the treatment is to relieve the nerve of its external resistance, the inefficient conducting apparatus, and that although the labyrinth participates early in the improvement,yet certain notes being more easily perceived by the cerebral center—just as the telephone translates some sounds better than others—are the first to appear as conscious impressions of hearing, while others take a much longer treatment to develop, appearing only when the external resistance is much diminished or at a minimum. My belief as to the favorable effect is, simply, that in many cases of deafness occasioned, probably, by the want of the functional activity of the internal ear structures, the ear fluid becomes more or less irregular in density, and of a somewhat unyielding consistency—the fluid being less liquid and because of gravity it becomes more dense along the lower borders, by reason of the natural attraction of the solid tissues for the more dense particles, it becomes more consistent in approximation to all the surrounding membranes. In consequence of this, adhesions more or less firm appear and bind the somewhat thickened fluid particles to the otoliths and membranous linings, the semicircular canals and the cochlea. This process is probably twofold; not only as a consequence of disease, but also the result of an increased pressure exerted on the fluid by the forcing inward of the stapes and membrane of the round window. Undoubtedly in some cases, the fibroplastic changes occurring in the middle ear extend early to the internal ear and produce an effect there precisely as portrayed above. These pressure changes and those brought about by functional inactivity, as well as those produced by the extension of fibroplastic inflammation, all tend to thicken the labyrinthine fluids, to vary the density of different parts—increasing all parts in immediate approximation with the lining membrane—and also by their effect on the nerve, dull its sensibility, and by affecting the blood vessel supply reduce the normal nutrition.

The massage properly applied relieves the pressure on the internal ear, causes an active disturbance and circulation of the labyrinthine fluids, stimulates the peripheral ends, as well as the body of the auditory nerve, and improves the blood circulation.

So confident am I now in regard to the treatment of labyrinthine disease, that whenever I can find good bone conduction I feel that there is no insuperable obstacle in the way of improving the hearing. I consider that if the nerve center, the nerve itself, and the nerve terminals be intact, that there is often not only hope, but fair reason for believing that the treatment will be successful even when the other structures are involved. The problem is, so to treat the ear as to allow external sounds to, in some

manner, reach the terminal endings. As indicated before, massage applied as outlined here, also exerts an effect on the Eustachian tube. The constant to-and-fro motion of the ear membrane and of the middle ear contents forces down into the closed Eustachian tube a column of air which acts as a wedge and, while each motion of this column is imperceptible, it will be found by experience that few indeed will be the cases of such closure which do not succumb in time to this treatment.

The method is one so easily applied, so devoid of pain and discomfort, so rational as to its application, and promises so much in fields which have up to the present been practically inaccessible, that I feel sure that if used fairly and impartially it will commend itself more and more as we grow experienced in its use. I believe ear disease will lose much of its stubbornness and the treatment much of its unsatisfactoriness as this method is developed. I do not believe that my method is by any means perfect, but hope that with the aid of other workers in this field of medicine, we may in a few years be able to present such a system of ear therapeutics founded upon a rational mechanical basis as will serve to relieve thousands who by our present methods are incurable.

DISCUSSION.

DR. F. T. ROGERS, Providence, R. I.—said that his experience in the use of phono and pneumo-massage prompted him to add his testimony to the inefficiency of the treatment. He had used it for several years, making as critical a study of each case as he was able, and he had not seen improvement in over 1 or 2 per cent., while in a larger percentage there was actual impairment of hearing. In perhaps 6 or 8 per cent. there was partial relief of tinnitus. The theory of aural massage is a fascinating one, but we should not forget that in carrying it to a greater degree we are advising as a therapeutic measure a procedure which causes boilermaker's deafness. It is a method of treatment which by most aurists has been used only to be condemned, and Dr. Lautenbach is to be congratulated upon obtaining results which have not been verified by published reports of others.

DR. J. S. A. NICHOLS, of New York—stated that his experience with pneumo-massage had been disappointing, and it had been rather extensive. It was true that improvement took place, but in the vast majority of instances it was only temporary, and the patient returned after a time with tinnitus and hearing unimproved. In one class of cases, massage was certainly contra-indicated—those where there had been a suppuration with a subsequent cicatricial membrane. In regard to the removal of the ossicles the sum and substance of all the discussions seems to be that the improvement in hearing was not permanent, but when healing took place the hearing was as bad or worse than formerly.

DR. ALDERTON, Brooklyn—Reported a case of removal of hammer and incus in a young lady, the subject of chronic suppuration, in which the suppuration was cured and the whisper advanced from two feet to twenty-two feet. This improvement has kept up and the patient has been under observation for three years. The Doctor deprecated the operation of ossiculectomy in cases of chronic catarrhal otitis media, but recommended it very highly in cases of chronic suppuration of the middle ear, where the tuning fork reactions, etc., showed the internal ear to be in normal or good condition, and where the hearing has been so reduced as to warrant the supposition that operative interference can not make the hearing worse and must, if anything, make it better.

THE SURGICAL TREATMENT OF CHRONIC SUPPURATING OTITIS MEDIA.

Read in the Section on Laryngology and Otology, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7–10, 1895.

BY J. H. BRYAN, M.D.
WASHINGTON, D.C.

It is not my purpose in this short communication to go extensively into the subject of the management of cases of chronic suppurating otitis media, but only to emphasize a form of treatment that has of late received a decided impetus, and which in many cases offers us the only rational treatment for this obstinate affection, one that is considered so unsatisfactory by many that we, who have these cases to treat, are condoled and sympathized with for being willing to devote so much time in the treatment of affections, the final issue of which is so uncertain.

Much depends upon the seat of the inflammation, whether it is in the epitympanic or in the lower tympanic cavity, they being characterized by somewhat different symptoms. In suppurative inflammations affecting the epitympanic cavity or attic, the perforations are situated in the membrane flaccida or the membrane of Shrapnell, and they are situated either anterior or posterior to the short process of the malleus. Perforations situated in the membrana always mean caries of the ossicles, which may also be associated with caries of the surrounding walls of the middle ear. Owing to the high situation of these perforations, drainage is not readily obtained, and a radical operation here is therefore more frequently called for than in those cases where the inflammation is confined to the lower tympanic cavity, in which case the perforation is generally situated in the anterior or posterior inferior quadrant of the membrana tensa, and permits of much freer drainage. While caries is frequently the cause of the prolonged suppuration in this form of abscess, it is not so generally present as in those cases where the inflammation is confined to the attic. In nearly all cases of prolonged suppuration of the middle ear, the ossicles will generally be found to be in a more or less state of caries. The bonelet most frequently found diseased is the incus, then the malleus, and finally the stapes which has the power of resisting attack longer than the others. With the exception of its head it is rarely affected.

If after giving the patient a fair trial of all the well-known methods of instilling and insufflating antiseptic medicaments into the middle ear the suppuration still continues, then it is our duty to resort to more radical measures which consist in removing the necrotic membrane with its carious ossicles. The aurist must decide for himself when he has exhausted the milder measures before subjecting the patient to an operation. I believe in many cases the sooner it is done the better, as it is our duty to arrest the suppuration in this cavity as soon as possible; by so doing we not only preserve the hearing, but prevent the serious sequelæ of this affection that so frequently result disastrously to the patient's life.

The operation for the removal of the membrana tympani and the ossicles removes all septic material from the middle ear, permits of freer drainage, and enables us to apply the antiseptic lotions directly to the inflamed mucous membrane of this cavity.

The duration of suppuration after the excision of the diseased membrane varies in different cases, but

depends to some extent upon the length of time the abscess has existed, and the depth to which the carious process has extended into the surrounding bony walls. In the case I have to report, the discharge ceased at the end of a week, and at the expiration of three weeks after the operation the drum membrane had been almost entirely reproduced; only a small opening remained in the upper part of the membrane about where the short process would be if present.

While in many cases of partial destruction of the membrane it reproduces itself with great rapidity, still such a rapid redevelopment after total excision as in this case is unusual. The cessation of suppuration can be explained by the fact that caries was limited to the ossicles and the most superficial cells of the attic.

The benefits to be derived from this operation are well illustrated in the report of the following interesting case:

Miss —— consulted me Sept. 1, 1894, giving the following history: she stated that her general health has always been excellent until the present time; when about 10 years of age she suffered from an abscess in the left ear, the discharge from which continued for about six months, and when this ceased she was quite deaf. Since that time she has had frequent inflammation in the left ear, accompanied by pain, when she caught cold; but not going into the suppurative stage until the present attack which commenced about August 1 of the present year. At this time she was not in very good general health. This attack began with severe pain in left ear accompanied by nausea and giddiness, but there was no discharge until seen by me September 1, when pus was observed for the first time. On examination, there was found to be a diffuse inflammation of the external auditory canal due to furuncles, with a small quantity of pus exuding from the canal. She complained of intense pain both in the external auditory canal and in the deeper parts of the ear, radiating in front and at the back of the auricle over the mastoid region. There was some swelling in front of the auricle just above the tragus, but there was no pain or tenderness over the mastoid region. The swelling in the external auditory canal was freely lanced and hot fomentations applied. This was not followed by much relief as to the pain which seemed to increase and it was accompanied by nausea, vertigo, double vision and vomiting. Although the swelling in the canal subsided somewhat after the scarification there was still too much tumefaction in the deeper part of the meatus for the membrana tympani to be visible. The next day, however, after the continuous applications of hot fomentations there was a profuse discharge, followed by great relief as to pain and the other threatening symptoms. With the appearance of the pus secretion the swelling in the canal continued to subside, and a polyp about the size of a large pea was observed blocking up the canal. This was removed with the snare October 5, and it was found to spring from the middle ear, projecting through a perforation in the membrana Shrapnelli, just posterior to the short process of the malleus. The removal of the polyp was followed by a free discharge of thick caseous pus. Two days after the removal of this growth I removed a large cholesteatomatous mass from around the perforation which was pressing against the drum. This was followed by marked relief as to the pressure symptoms which up to this time were still very marked. The membrane was deeply swollen and congested, especially in the region of Shrapnell's membrane in which the perforation was confined.

The secretion of pus continued quite profuse and caseous in character for about a week or ten days after the removal of the polyp, but under the continued use of hydrogen dioxid it gradually diminished in quantity, and became more fluid in character. On mopping out the canal with a cotton-tipped probe, rough bone was detected around the margins of the perforation which had increased somewhat in size since the subsidence of the inflammation. The naked probe failed to reveal any rough bone. After treating the ear locally for six weeks with antiseptic lotions with no material change in the flow of pus, it was deemed advisable to remove the necrotic membrana tympani and the ossicles which were believed to be the seat of the caries.

November 9. Before the patient was sent to the hospital the hearing distance was as follows: watch heard only on contact, whisper voice not heard, loud isolated words were heard with difficulty at five feet; tuning fork, bone conduction longer and louder than air conduction.

November 15. The patient was admitted to the Garfield Hospital, and on the same day under chloroform anesthesia the necrotic membrane and ossicles were removed according to the usual well recognized method. Owing to the adhesions that had formed between the drum membrane and the walls of the middle ear, and the profuse hemorrhage, its removal was attended with some difficulty. The hemorrhage was finally checked with a 4 per cent. solution of cocain. There was only a small portion of the incus found, the remainder having disappeared, and the head of the malleus was honeycombed by the carious process. The stapes, as far as could be ascertained, was in good condition and was left in position. After the removal of all diseased tissue from the middle ear, the canal was mopped out with a solution of bichlorid of mercury (1 to 6000) and the canal lightly tamponed with sterilized cotton.

November 16. During the night there was considerable pain which passed off toward morning, and also some nausea and vertigo. The discharge during the night was sufficient to necessitate changing the tampon twice.

The ear was cleansed daily, iodoform and boric acid insufflated, and the canal tamponed.

November 21. She was well enough to leave the hospital, and came to my office for treatment. There was very little discharge present, not enough to moisten the tampon. The giddiness still remains, but to a much less degree; complains of a tremulousness and difficulty in getting a deep inspiration. Hearing distance for isolated words, conversational tone, sixteen feet; watch heard at one inch; Galton whistle heard sixteen feet and over.

November 27. No discharge, giddiness has entirely disappeared. The drum has been reproduced to more than two-thirds of its full extent.

December 5. Owing to a severe cold which the patient contracted, there has been a slight discharge of mucus through the small opening in the membrane, which gradually passed off under the local applications of salicylic acid, gr. xx to alcohol ʒi.

May 8. There has been no return of inflammation and the patient is enjoying comfort with a compara-

tively serviceable ear; the hearing distance for the watch being two inches, and for the voice, conversation tones, about five feet.

This operation offers many advantages to the patient when the caries is confined to the middle ear cavity and the superficial cells of the attic, but when the trouble is more deeply situated, as in the deeper parts of the attic and antrum, then the more radical operation of Schwartze, Von Stache, or some modification of these must be resorted to.

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DISCUSSION OF DR. TURNBULL, LAUTENBACH AND BRYAN'S PAPERS.

DR. H. V. WURDEMANN, of Milwaukee, Wis., in opening the discussion said, the discussion of subjects such as dealt with in the papers of our colleagues, Drs. Turnbull and Lautenbach, is apt to resolve itself into an experience meeting. I can only corroborate the frank statements of the former gentleman as to the prognosis to be given to patients regarding the results to be achieved by treatment, in fact, on the acceptance of every patient for treatment of chronic aural catarrh, I give a brief clinical lecture on the natural history of this disease and tell what may be expected, judging from the percentages of cures or of cases in which relief is given from previous experience of myself and others. It seems to me, however, the results of treatment by the various forms of massage are better than those given by Dr. Turnbull. My experience has been that fully one-half the cases that apply within a year after the beginning of tinnitus are practically cured by a course of treatment. Others are greatly relieved and fully 75 per cent. of all cases in all stages acquire benefit by simple treatment. However. these cases should receive continuous treatment for a sufficient length of time to remove nasal and pharyngeal congestion or catarrh and to secure patulency of the Eustachian tubes. The patients are warned that it will be necessary for them to return in the spring and fall of each year for a few visits when this has been obtained, after a dozen or twenty-five treatments . Such that do are benefited and their disease held in check in the greater majority of even the worst cases. I have patients now under treatment who have been under my care for six years, and who hear as well or better than they did when they began with me, even though the disease, before the inception of the treatment, had been progressing. We can not rely upon one form of treatment to the neglect of others. There are several kinds of massage, *i. e.*, with the Siegel "otoscope," the Luca spring probe, and direct massage with a cotton-tipped probe applied to the short process of the malleus, and internal massage made after the method I described one year ago before this Section at the San Francisco meeting. (See JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, Oct. 13, 1894). By this method the administration of vapors of various natures is combined with vibratory massage of the Eustachian tube and lining of the middle ear, the drum-head and ossicles by intra-tympanic massage through the catheter. Attention to the nose and throat has been made in all these cases; in our lake climate there is a class of cases coming under the head of "apex catarrh" as described by Howard Straight, of Cleveland, in which there is congestion of the apices of the lungs and slight chronic bronchitis in connection with the catarrhal trouble of the upper air passage. These are greatly benefited by the administration of creasote in moderate doses. I find that nitro-glycerin in some cases has a marked influence on diminishing tinnitis and vertigo, and is worthy of trial. In regard to "phono-massage," as described by Dr. Lautenbach, would say that my experience has been limited and on account of the diagreeable effect of the sounds of the vibrometer in some cases the patient has absolutely refused to go on with the treatment after one sitting. The middle ear catarrh is certainly amenable to mechanical treatment in the majority of cases in which the labyrinth has not been involved. In the latter cases I am skeptical as to the results to be obtained by any form of treatment and I am sure these cases will always prove to be incurable. A certain proportion of cases where the middle ear is alone involved or where there is but little sclerosis of the labyrinth after due trial for sufficient length of time, *i. e.*, for several months of simple treatment by pneumo-massage and vapors, together with attention to the upper air passages, are subjects for operation. I have had a number of beneficial results from operations on this class of cases. There have been several dismal failures, one of which I reported to this Section at the Detroit meeting. (See JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, Oct. 22, 1892), in which my subject was made stone deaf by the operation. In another, I failed to extract even the malleus, which on account of the bleeding and narrowness of the canal was dislocated into the attic and could not be removed. I can not ascribe this to want of experience for I have done this operation over sixty times, the greater majority of the cases, however, being in chronic suppuration of the middle ear. I wish to call attention to the difficulty of the operation and to the necessity for proper knowledge of the anatomic relations of the parts. In many cases the operation is done chiefly by the sense of touch, on account of profuse bleeding, which is especially noticeable when the patient is under ether anesthetization.

DR. S. MACCUEN SMITH, of Philadelphia—The treatment and care of patients suffering from a chronic non-suppurative inflammation of the middle ear has long been a perplexing subject, and upon which the literature has been very voluminous; however, the methods of treatment as advocated by various authors and authorities have been so contradictory in their application, and vary so markedly in the apparent results obtained by different investigators, that we find a majority of the medical profession of to-day just about as skeptical of the benefit to be derived from treating this class of cases as they were in former years. Nevertheless, within the past few years some notable advances have been made in the way of treating the large and increasing number of our population afflicted with a chronic catarrh of the tympanum.

From the paper just read by Dr. Turnbull, we must all be impressed with his earnest effort to show that considerable has been accomplished in the way of operative interference in this class of cases. Within the past few years I have excised the membrana tympani, malleus and incus, one or all, in a large number of patients, and I must say that my experience thus far as to the benefit derived therefrom has been on the whole quite disappointing. This large series of operations was undertaken purely as an experimental matter with a hope that I might be able to contribute some practical information on a subject that has its pro's and con's ardently advocated in almost every medical meeting the world over. To an extent at least, I think I have succeeded in establishing a few facts, although sufficient time has not yet elapsed to enable me to make positive assertions. After operations of this character almost every case will be greatly improved in hearing, but this as a rule steadily decreases until the patient is in about the condition he was before the operation. Some cases have been reported in which the hearing power was considerably reduced below the point it recorded before operation, but my experience does not bear this out. In a few of my cases the improvement in hearing has continued over a period of three years or more, and I have every reason to believe this improvement will be permanent.

I am familiar with two of the cases quoted by Dr. Turnbull, and am sorry that more of my patients did not receive similar benefit. Not long since, a patient upon whom Dr. Burnett operated (the wife of a physician) came under my notice and I was much impressed not only with the great improvement in hearing she had maintained for a period of two years, I think, but also her entire freedom from tinnitus and vertigo. In conclusion, I would say that I believe the operation under consideration is capable of giving good results when proper cases are selected for its application. That inasmuch as the percentage of patients are so very small, in which the hearing is materially benefited, we are not often justified in advising the operation when deafness alone is the only indication for interference. However, I believe the operation to be a sound surgical procedure when it has for its object the relief of severe tinnitus and staggering aural vertigo, of course after other recognized methods of treatment have failed to give relief.

I wish to say that I have never seen any alarming symptoms or complications accompany or follow this operation. As regards the efficiency of pneumo-massage, as advocated by Dr. Lautenbach in these non-suppurative cases, my experience has been rather limited, but judging from the results of several of my professional friends, who have had extended opportunities for observation, I am inclined to believe this method of treatment to be a good adjunct to the general line of treatment, of more or less value, but like most agents, quite limited in its usefulness.

Mr. Chairman, in answer to the note sent you by one of my hearers, in which the question was asked: "Can you see the stapes in every case, and in what percentage of cases

can it be removed?" I would say that my experience with the stapes is limited to but one case, and in this its removal or partial removal was entirely accidental, and as the patient suffered from severe vertigo for several weeks afterward, I would not care to have a repetition of the accident, much less voluntarily remove it. I have been always been opposed to any interference with the stapes, and believe that those who formerly advocated its excision have now entirely abandoned such radical measures.

DR. ALDERTON, Brooklyn—Dr. Alderton's experience in the removal of the ossicles for the treatment of chronic catarrhal otititis media, both for the relief of deafness and of tinnitus, has been such as not to warrant him in advising the operation of ossiculectomy in such cases. He recalled one case in which the operation was done under rigid antisepsis in which the hearing for the whisper was advanced from one foot to sixteen feet +, and yet considerable post-operative irritation manifested itself, suppuration taking place with more or less periostitic pain. When these symptoms subsided the membrana tympani was gradually reformed with return of hearing to the condition previous to the operation, with, in addition, a feeling of great stuffiness in the ear. Three several times was the reformed membrana tympani excised with similar results, the patient then being advised to rest content, as the danger of causing mastoid inflammation seemed to increase with each attempt. The whisper remained about the same as before the operation, and the feeling of stuffiness in the ear very marked and unpleasant. In thinking over the case, were the operator to interfere once more he would by Hartman's chiseling instrument remove the upper and posterior segments of the ammlus tympanicus in the hope of preventing the regeneration of the membrana tympani and so maintaining the improvement in the hearing.

Alderton, in cases of chronic suppuration strongly advises the removal of the ossicles in all cases that have not yielded within a period of three to six months to systematic treatment, and in which the nerve has been found by the tuning fork and Galton tests, to be in a normal or nearly normal condition, the hearing being much impaired, but counsels that caution be exercised in those cases in which the hearing is only moderately or very little impaired, since in these cases it is perfectly possible to have worse hearing after than before the operation. It then becomes a question as to which the patient most wishes, or which is most necessary to him—the integrity of his hearing or the cure of the suppuration, and as we can not promise a cure of the suppuration, invariably, in these cases, it is wrong to hazard the amount of hearing he still retains. In appropriate cases coming out of the above indications great improvement can be hoped for. In one case, Alderton removed the hammer and incus in a young girl for O.M.P.C. the whisper being improved from two feet to between twenty and thirty feet, the suppuration at the same time being cured, and this improvement has been maintained for over two and one-half years.

In answer to a question by Dr. Fulton, Dr. Alderton thought that failure to get the incus in O.M.C.C., though unavoidable in a certain proportion of the cases, was due to the removal of the hammer before first disarticulating the incudo-stapedial joint. He advised, first, making a flat of the posterior quadrant of the membrana tympani, the inferior border remaining the attached border, thus exposing the incudo-stapedial joint usually, then cutting the stapedius and the articulation. The tensor tympani and the anterior and posterior folds should now be severed, the patient's head elevated, the malleus extracted, when usually the incus will come into view, or may be reached with a Hewit or Weber hook, or the incus may be removed before extraction of the malleus. Plugging and cocain should be used to control the hemorrhage, ether anesthesia being used.

In answer to a question of Dr. Würdemann, Dr. Alderton uses McKay's or Hartman's forceps for the extraction of the malleus. The McKay is used in all cases of narrow or tortuous canal. Also, though he has occasionally been successful in its use, he does not think that cocain anesthesia is sufficient in most cases of O.N.C.C., though more apt to be so in case of O.N.F.C.

Dr. Alderton's experience in the use of phono and pneumo-massage has been rather unhappy, as he has not only failed to benefit his patients, but has often produced unpleasant symptoms, as vertigo, tinnitus, etc.

DR. LAUTENBACH—In regard to Dr. Würdemann's results from massage he has as he stated, employed it through the Eustachian tube with indifferent results. He has probably used it for a very limited period at each sitting, from a fraction of a minute to a minute only. When used for such short periods good results are obtained only in the mildest cases. Massage to be effective must be used at varying pressures from 50 to 200 motions per minute, and must be continued for from five minutes in mild cases to as much as one to two hours in old, resisting, adhesive troubles. As for Doctor's deaf and dumb brother, it would be most interesting to know whether he hears or feels the sounds spoken of. If he hears them I am sure some improvement awaits the proper employment of massage as all of my deaf and dumb patients treated by me within the past year (six in number) show some improvement in hearing.

Dr. Turnbull in his paper gives us some cases operated upon in whom the watch hearing distance varied from five to seven inches—these patients were suffering with tinnitus and vertigo; unless these last two symptoms were most severe—so severe as to materially interfere with the patient's ability to earn a livelihood or to so discomfort him as to render life a burden, suggesting suicidal thoughts—I would not consider myself justified in performing an operation and risk the loss of an amount of hearing which is rarely present after an ossicular operation. A case interesting in this connection is that of Mrs. Hunter, who after two examinations by an ear specialist was told that in order to relieve the tinnitus and vertigo nothing else but an operation would suffice. When she came to me, in addition to the above symptoms, shs showed a marked degree of deafness, being able to hear the watch only on contact. As the result of phono-pneumo massage the vertigo completely disappeared, the tinnitus only appearing in a mild form when she had a head cold; the hearing in the one ear is watch thirty-eight inches, the other thirty-six inches. Is it conceivable that this result could have been obtained by an operation? Is it not more likely that even though the vertigo and tinnitus had disappeared, the deafness would have remained? Had massage failed in this case, the ear instead of being injured by the delay, would have been rather improved by it, as the mobility of the joints being increased, the operation can be more thoroughly and carefully done.

Dr. Turnbull has remarked that he has not known of a case of mastoid disease following or caused by the operation. I recall a case of a young woman Miss Ida F., of Brownsville, Tenn., upon whom I operated on one ear about April 1893, and the other ear November, 1893, the extreme constant, uncontrollable tinnitus indicating the operations. She left Philadelphia and went to Louisville, Ky., about the middle of December, 1893, apparently in perfect health. Shortly after Jan. 1, 1894, I heard that she had developed some ear disease, and later on I received a letter from Dr. Cheatham of Louisville, informing me that she had developed a mastoiditis appearing first in the ear operated upon last, which later affected the other ear. Despite prompt opening of the mastoid cells and thorough cleansing and antiseptics, the patient died. While I can not be sure there was the slightest direct connection between the ossicular operations and the mastoiditis, I yet have a strong belief that the operation predisposed to the inflammation as it deranged the structures so as to render them more susceptible to deleterious influences.

Dr. Rogers is quite correct in his assumption that massage may do harm. Many of the instruments are crude and unscientifically constructed. In this paper I have but spoken of the results obtained from the various machines of my own construction. I know of a prominent specialist who has completely abandoned massage methods because of the bad results he obtained from the vibrometer. He assures me that in one case he is positive that he produced a hemorrhage into the labyrinth, with total loss of hearing, by the use of this instrument.

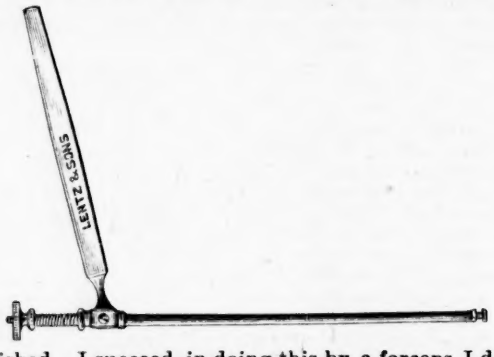
In reply to Dr. Nichols' criticism that he can not see how the influences that occasion boiler maker's deafness can be curative in thickened and plastic middle ear conditions, I will say that in the one case the noises are continuous, loud and oppressive, and act as irritants, whereas in phono and pneumo massage, the therapeusis depends upon the regularity of a mild stimulation of the ear structures and its nerve sufficient to gradually break up adhesions and restore the normal circulations, but not enough to result in the throwing out of plastic secretions.

Dr. Alderton has called attention to a class of cases in which ear massage gives the best of results. I refer to cases of old suppurative disease. If the perforation be filled up by cicatricial tissue or if the perforation be present, the effect of massage treatment results almost invariably in a marked improvement in hearing—the improvement being more easily brought about and greater in degree than is present in an intact drum head with an equal degree of

deafness—the reason for the greater improvement being the fact that the massage exerts its influence directly on the labyrinth through the oval and round windows without the intervention of the drum head and ossicles. Where the drum head has healed over, the cicatricial tissue allows of a greater to and fro motion within the middle ear without the intervention of the ossicles.

Dr. Alderton has criticised the proposition that an increase in the circulation of the middle ear results in curative influences. The diseased ear with an increase in the quantity of fibrous and plastic tissues can be compared to a dislocated shoulder joint. After the joint has been replaced it is kept quiet for a long time, and when the ligaments are healed the joint is stiff. Effusions have occurred in the muscles and tissues about the joint; the circulation is impeded. To cause absorption of these effete and inflammatory products the joint is carefully exercised and the muscles kneaded. In time the circulation is restored and inflammatory products removed, the muscles and joint resuming their normal functions. So with the ear; the inflammatory deposits as well as the deposits occasioned by disuse, calcareous and others, are present in an ear in which the functional action and circulation are below normal. By increasing the functional activity artificially, we restore the circulation and remove the deleterious deposits in just the same manner as the masseur cleaned out the shoulder joint.

Drs. Alderton and Fulton have both called attention to the difficulty of performing ossicular operations, and of the liability of losing the incus high up in the attic. Dr. Würdemann I believe, has told us of a case in which the malleus slipped up so as to elude removal. The danger is an ever present one unless we have some way of firmly holding the malleus and then of opening the incudo-stapedial joint and then raising the handle of the malleus outwardly and upward, while the detachment of the malleus and incus is accomplished. I succeed in doing this by a forceps I devised some two years ago, and which I believe is being used by Dr. Cheatham of Louisville, Ky. It consists of a rod with a toothed end presenting against a corresponding toothed end of an inclosing tube, the distance between the toothed ends being regulated by a nut overcoming the pressure of a spiral spring, the action of this spring being to keep the toothed blades apart. After the drum membrane is detached, the forceps is inserted and the handle caught firmly as high up as possible, when the nut is screwed down sufficiently tight to hold the handle of the malleus, and yet not so much as to crush it. Now having the malleus under control by cutting the tensor muscle and then drawing the forceps slightly outward, raising it at the same time, the incudo-stapedial joint is readily reached and these bones disarticulated—the incus and malleus attachment can then be cut and these bones removed. I always use general anesthesia for these operations, never depending on a local anesthetic.



That the method does influence the labyrinthine structures would seem to be proved by the fact of the very favorable results obtained in perforation cases. In order to prove the proposition more thoroughly, I will quote the case of a deaf and dumb girl, Miss E. G., 12 years old who has not been able to hear at all since she had a severe attack of scarlet fever when two or three years old. She has been examined by Dr. Burnett who pronounced it a case of labyrinthine disease, of a hopeless nature. By the aid of phono-pneumo massage she has been made to hear and even to distinguish many voice sounds and is also able to speak with her family and friends She has developed to such an extent that she is now a pupil in one of the public schools of Philadelphia. Again, as a proof of the influence on the labyrinth of such treatment, I recall a girl, Miss A. G. H., of Camden, aged 24, who in 1885 fell down a hatchway striking the right side of her head. She was unconscious for four or five hours and since her fall has not heard in the right ear. In the belief that some of the ossicles had been broken or detached, in March, 1888, I removed the malleus incus, and as these seemed in good position the stapes as well. The operation had no effect on the hearing, the tinnitus being but slightly diminished—no hearing in the right ear whatever. In 1890 she consulted Dr. Knapp of New York, who pronounced the case hopeless. In 1894 she returned to me. By all tests—phonographic tests with all varieties of sounds—the hearing remained negative. There is a secondary membrane present. I have been treating her by phono and pneumo massage since then with the result that she hears the watch on contact, and sometimes when just removed from the ear.

As before said, I consider this method as offering a new path by which we can accomplish often good results for hearing as well as tinnitus and vertigo, and it does it by putting the ear in a more healthy and natural condition—that it affects not only the drum head and ossicular chain, but the labyrinth and auditory nerves as well; and that this treatment does not in any way interfere with operative measures should they later be deemed necessary.

EVISCERATION OF THE EYEBALL.

Read in the Section on Ophthalmology at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY L. WEBSTER FOX, M.D.

PHILADELPHIA.

This operation must not be confounded with abscission, although both are somewhat similar in character. The latter operation has been abandoned by the majority of ophthalmic surgeons on account of its risks.

Evisceration first consists in excising the cornea and thoroughly removing the contents of the globe, and replacing the vitreous with a glass globe.

Abscission of the cornea, as suggested by the older Critchett, was, probably, the best of this dangerous operation. In it, no attempt was made toward emptying the contents of the globe.

We are indebted to three English surgeons for bringing evisceration prominently before the notice of the profession practically. Mules, of Manchester, first operation was performed in October, 1884. Brudnell Carter, who modified the abscission operation of Critchett some years ago, is now one of evisceration's most ardent advocates, while Bickerton, of Liverpool, performs it preferably to enucleation.

Frolich was the first surgeon to perform the evisceration. This he carried out in 1881 and named it "excochleation." Muldon and Graefe carried on their observations in 1884. Dubanton followed next with a series of experiments.

I shall not review the literature on the subject, as it has been done by my friend Dr. G. Oram Ring, in a very recent article[1] on this subject. My remarks shall be limited to my personal experience with some cases.

Case 1.—In 1885 I performed the operation twice in the Germantown Hospital, but the reaction was so great, including tremendous swelling of the orbital tissue and eyelids, great pain, and an elevation of temperature (105° in one patient, 105.5° in a second) I felt that discretion was the better practice and removed both glass globes, later on removing the small stumps of the atrophied eyeballs. During the summer of 1893, while in Liverpool, Mr. Bickerton brought to my notice three patients upon whom he had recently operated. The cosmetic effect was so beautiful that I again became deeply interested and gathered renewed courage at his success. I also had the opportunity of witnessing the operation at the Liverpool Infirmary by Mr. Bickerton, and also the after treatment. To see a skilled operator carrying out the technique of an operation is infinitely better than to follow

[1] "Evisceration of the Eyeball" reported in University Medical Magazine, April, 1895.

the details of a written description, be it ever so clear and concise.

Case 2.—The third[2] patient upon whom I performed this operation, June 29, 1894, at the Medico-Chirurgical Hospital, was a young Assiniboine Indian from Montana, now at the Carlisle Indian School. He was brought to the hospital by Dr. Montezuma to have the eyeballs enucleated on account of pain and much discomfort. As near as we could get at the history of the loss of the eye, it was this: about three years previously, while on the plains, an inflammation of the left eye took place which gradually progressed to an ulceration of the cornea, and finally, to complete destruction of this part of the eye. Instead of removing the eyeball, a Mules' operation was performed, under ether. The details of the operation were carried out without complication and the patient put to bed.

The orbit was examined after twenty-four hours—no untoward symptoms were present, excepting a slight swelling of the upper eyelid. Toward evening the eyeball became somewhat painful, and the patient did not rest well during the night. Temperature 102° F.; the next day temperature fell to 99° F. More swelling of the eyelids appeared, with considerable chemosis of the conjunctiva, but no discharge of pus. Chloral and a bromid were given to quiet the pain, and hot fomentations were applied to the eyelids. On the third day the conjunctiva became very edematous and protruded between the eyelids; otherwise the patient's condition was about the same as before. The internal treatment at this time was hydrarg. bichlor., gr. 1–32; potass. bromidi, gr.x, three times daily. To the protruding conjunctiva, pressure bandages were applied, which restricted the protrusion. The temperature fluctuated about the 99 degree line until July 7, when it fell to normal, and the various inflammatory conditions subsided. At the end of the week I removed the stitches from the conjunctiva. The sclerotic swelling did not subside for ten days, when the pain disappeared, and at no time during his residence at the hospital did it return.

The operation was entirely successful, affording a beautiful support for the artificial eye, which was adjusted July 18. The artificial eye stood out full and prominent with almost perfect movement—a decided improvement over the old operation of enucleation.

Case 3.—Operation performed Oct. 26, 1894, on a young woman, a patient of Dr. Frutchey. She had been wearing an artificial eye over the blind eye for several years. The result was that she had symptoms of sympathetic irritation, and pain in the partially atrophied eyeball. The operation was carried out in detail as above described. Upon removing the cicatricial cornea, I found the scleral cavity filled with a bony mass, round and shaped exactly like a small acorn. This growth of bone was also a very important factor in the causation of pain. The bone was growing larger and the sclerotic coat was restricting its growth, hence the pain. The bone was removed without difficulty and given to Professor Laplace for microscopic examination. The patient had no untoward symptoms; the temperature ran up to 101 the first day after the operation, and on the third to one degree above the normal line, but no visible change followed—the patient leaving the hospital in twelve days. In this case there was no reaction, no swelling of the eyelids, and the conjunctiva but very slightly chemotic. The artificial eye stands out on a level with its neighbor. The movement is perfect, falling but little short of normal.

Case 4.—A young woman, aged 22, admitted to the hospital on account of an irritable left eye, staphyloma of the cornea; eye useless. On account of the repulsive appearance of the eyeball, the patient desired its removal, so as to replace it with an artificial eye. The operation was performed under the same antiseptic precautions with little or no reaction, no swelling of the eyelids and only a suspicion of edema of the eyelids. Owing to a difficulty in matching the right in color, the artificial eye is not quite large enough. The movement is exceedingly good.

Case 5.—Male, age 33. In September, 1884, was struck in the left eye by a brass spring, puncturing the sclerotic, from which exuded a bead of vitreous. When brought to the hospital the vitreous was snipped off and the scleral wound was closed by stitching over it the conjunctiva. The eye became involved in a general uveitis, with a result of a total loss of vision and slight shrinking of the eyeball. I examined this patient about once a year and during the ten years no inflammatory change took place in the eyeball. The hyperopia was fully corrected in the right eye and glasses worn. On Jan. 13, 1892, the following note was made in my case-book: the sclerotic scar visible, through the conjunctiva no perception of light, total posterior synechia, lens cataractous, no perception of light. Tension—1, eyeball manifestly shrunken, no pain nor irritation. On Dec. 26, 1894, the patient came to see me on account of considerable congestion of the left eye, and slight pain on pressure. The result of the examination revealed sympathetic irritation. The patient was placed on active mercurial treatment, which reduced the active symptoms; both eyes became perfectly quiet. Having had this warning, I advised the evisceration operation, which was performed Feb. 2, 1895, at the Medico-Chirurgical Hospital. The operation was witnessed by Drs. Risley and Carpenter, two members of the Association. The case made a very good recovery, with little or no reaction, the only defect is a slight gaping of the conjunctiva and sclera, owing to the central stitches of both conjunctiva and sclera giving way and allowing the glass globe to be visible—the patient is, however, wearing an artificial eye, and no inconvenience has become manifest up to the present writing.

Case 6.—Child, female, age 11. Staphyloma of the cornea of the left eye, due to an ulcer of the cornea three years previously; since then the cornea has developed into a very large staphyloma. The operation was performed May 3, 1895. At the present writing the patient is doing well. The details of the operation are carried out under ether. The eye is thoroughly irrigated with a lotion, which I call formula 1 to designate it from almost the same formula for sterilizing instruments. The eyelids are separated with the ophthalmostat. The conjunctiva is dissected from its corneo-scleral attachment back to about the equator of the eyeball, the muscle not being interfered with; then the cornea is excised—this is best done with a large Beer's knife, as in performing a flap operation for cataract. The lower half of the cornea is removed with curved scissors and the contents of the globe are taken out with a small scoop, devised for the purpose. Great care is necessary to remove the ciliary body and choroid and the head of the optic nerve, leaving the clean white sclera. Mr. Carter has devised a rubber bulb which is inserted into the scleral cavity, and inflated with air to produce pressure on the central artery to prevent hemorrhage. As this application has not been a success with me, I pack the scleral cavity with sterilized cotton. After waiting a few minutes this is removed, and the contents of the scleral cavity again thoroughly irrigated with a hot antiseptic fluid. A sterilized glass globe which is best suited to the case, is then inserted with a specially devised instrument; the sclera is split vertically so that the edges may be drawn together and held by fine stitches of catgut, completely hiding the glass ball. The orbit is again thorourghly irrigated with the hot solution and the socket packed with sterilized cotton, over which is bound a sterilized bandage, and the patient put to bed.

Formula 1. Irrigating fluid.

Hydrarg. bichlor	gr. 1–50	003
Zinci sulpho-carbolatis	grs. xxx	1 80
Aq. menth. pip	ʒ iv	16
Aq. camph.		
Aq. destil āā	ʒ iv	128

℞ Sol. ft.

The same formula is used for instruments less the hydrarg.

In Case 5, instead of using black silk to suture the sclerotic coat, sterilized catgut is used. Whether the knot became untied or whether absorption took place too rapidly, causing gaping of the wound and thus allowing the glass ball to press upon the conjunctival suture and cause it to tear, I am unable to say, but from whatever cause the glass ball is visible. The patient is now wearing an artificial eye without any inconvenience.

When the operation is performed under strict antiseptic precautions very little or no reaction follows, and the results, as Mr. Mules states, "are not as disturbing to the normal relation of the parts outside of the sclera" as enucleation. Dubanton and Graefe arrive at these conclusions: "That the procedure equaled in value enucleation in sympathetic disease, was safer as regards danger of purulent meningitis, can be performed in panophthalmitis, and that, when-

[2] Reported in Codex Medicus, Philadelphia, November, 1894.

ever done, a better stump is always secured." If we have in evisceration a method equally as safe as in enucleation, we certainly have in addition the advantage of giving better support to an artificial eye, getting rid of the sinister stare, the enophthalmus and the more perimetric rotation, with no disagreeable mucopurulent discharge so common after enucleation.

1304 Walnut Street.

DISCUSSION.

DR. S. D. RISLEY, Philadelphia, Pa.—My attention was favorably called to the Mules' operation by Mr. Carter, of London, and I have since performed it in one case with very satisfactory results. I regard the advantages of this operation to be:

1. Improved cosmetic results as compared to enucleation. (He exhibited a photograph to illustrate this in which it was scarcely possible to detect the artificial eye.)

2. The patient is much more comfortable after this procedure than after extirpation, for the reason that the tears flow off in a natural way and he is not disturbed by the collection of muco-purulent discharge in the orbit or behind the artificial eye as is usually the case after excision.

The disadvantages are: (*a*), the operation is a much more difficult one and should be done only with careful attention to asepsis and antisepsis. Its satisfactory performance is greatly aided by the ingenious instrument devised by Mr. Mules for the artificial vitreous, and the inflated bulb devised by Mr. Carter for arresting the hemorrhage within the scleral cup. (Instruments were exhibited by Dr. Risley.) (*b*), a second drawback is the considerable suffering which the patient must undergo for several days in most cases. There was marked edema of lids and chemosis of conjunctiva in my case, with slow pulse and temperature of 99.5 to 101 degrees for four days. This was treated with continuous application of cold compresses and lead water and laudanum. The chemotic conjunctiva was frequently cut, to allow discharge of accumulated fluid. After the fourth day, edema rapidly subsided. The swelling could not be regarded as an inflammatory reaction, but was probably due to cutting off the anastomotic circulation by the extirpation of the retina and choroid. (*c*), it is distinctly open to question whether in cases of imminent secondary panophthalmitis the procedure is as certain a prophylactic measure as excision, since volumes of the infectious microörganisms might thus be outside the sclera in the lymph channels. (*d*), in one case in which I had proposed the Mules' operation but did an excision instead, I found the foreign body which had penetrated the ball, lying near the optic nerve on the outside of the sclera, to which it was still adherent. I could but congratulate myself that excision instead of evisceration had been performed.

DR. G. ORAM RING, Philadelphia, Pa.—While the first published case of evisceration was by Fröhlich in 1881, Mr. Henry Powers claims to have seen Hancock perform a number of such operations before that time. I have published recently the history of the case of a child 10 years of age upon whom I operated and inserted a glass sphere. The reaction was very slight and there was no swelling of the lids; temperature 99.4 on the second day after the operation, falling to normal on the third and there remaining. The case was one of increasing antero-staphyloma in which eserin and pressure bandage had accomplished nothing. The tissues of the face surrounding the eye will, I think, develop much more satisfactorily when such an operation is performed on a young child than after enucleation. The cosmetic effect is unquestionable. Referring to Dr. Hotz's case of sympathetic neuritis following evisceration, and to the two published cases of sympathetic ophthalmia of Dr. Cross following the performance of the Mules' operation, I believe, with Mr. Carter, that as there had not been primary union of the scleral edges, the irritation was not chargeable to the insertion of the artificial vitreous. Should there happen to be extensive infiltration into the deep tissues of the orbit compelling deep incision, evisceration with or without glass globes would, as claimed by Dr. Noyes, distinctly hinder the satisfactory progress of the case. The perimetric measurements of my case were very gratifying. Inward rotation 20 degrees; outward nearly 40.

DR. F. C. HOTZ, Chicago, Ill.—One of the gentlemen has referred to my paper on "Sympathetic Ophthalmia following Evisceration," in which paper I spoke of the better cosmetic results claimed for evisceration and showed by measurements that as far as rotation was concerned, I was not in favor of evisceration. I have continued these measurements since, but regret to say that I have not had opportunity to measure the artificial eye set upon an artificial vitreous. I am not yet satisfied that the results of rotation are any better by this method. As to the cosmetic effects. After examining these photographs I do not see that the sinking condition of the upper lid is much better than after enucleation. The only point in favor of an artificial vitreous after evisceration is the fact that the socket is full and consequently there is no irritation from tears, so troublesome after enucleation.

DR. E. OLIVER BELT, Washington, D. C.—I want to ask if anybody here has had any experience in inserting the glass globe into the capsule of Tenon after operation? It seems to me that there you would get rid of the disturbing secretion and have the advantage of a full orbit. Perhaps the only thing that would not be as good as evisceration would be the movements of the eyeball.

DR. H. GIFFORD, Omaha, Neb.—In regard to the movements of an artificial eye after evisceration, I have made some investigations, and while I confess I have been disappointed in some cases, I have found decidedly superior rotation, and this increasing directly with the size of the stump upon which the artificial eye was set. When placed upon an atrophic ball, I found it so much better that there was no comparison whatever, and hence can not coincide with Dr. Hotz on that point. Now there is one other point, about the danger of sympathetic ophthalmia after evisceration that was mentioned by Dr. Risley. You possibly leave germs in the lymph channels about the eyeball. I doubt very much whether a few germs in this locality would make the difference you might suppose, upon superficial examination. One germ does not make a sympathetic ophthalmia. I think the toxins play a more important part in the development of the trouble. A point which may account for sympathetic trouble following evisceration is, that no matter how carefully you do it, you may leave some pigmentary cells or fragments of the retina attached to the optic nerve. I have experimented upon a considerable number of rabbits and upon examining them, been surprised to find quite a long piece of retina remaining attached.

DR. L. J. LAUTENBACH, Philadelphia, Pa.—Considering only the mechanical appliances used, the glass balls are compressed spheroids with a surface more or less flattened, and on this there is a small depression. It is evident if it is desired to preserve the most perfect muscular motion, that the greatest circumference must correspond to the equator of the eyeball and the flattened surface must be anterior; on account of the inner surface of the artificial eye being flattened, the opposite more curved surface fitting accurately at the nerve entrance of the eviscerated ball. Now the instrument here shown does not accurately so place the ball. If it does not, the ball may yet adapt itself in proper position or be placed there by the operator. This suggests an instrument constructed to hold the ball by a vacuum method until it is inserted. It consists of a rubber ball attached to a tube which opens out with a sort of lip of soft rubber of a size sufficiently large to adapt itself to about one-third the area of the glass sphere. To serve as a handle or support, the lip is made rigid by a backing of brass which extends over the rubber tube as well. By extracting the air in the bulb and placing the glass ball in proper position in the cup, the ball being firmly held is easily placed in position with its flat side forward. If necessary an expanding speculum could readily be devised to hold the sclera open while the ball is being placed in position. Another point which suggests itself to me is the thinness of the glass of which these balls are made. This piece which I hold in my hand is about one-eightieth of an inch in thickness. It is evident that in putting in an artificial vitreous we can at least use a weight of material equal to that of a normal vitreous, and could therefore use glass of one-fortieth or even one-tenth inch in thickness. The danger of breaking by blows would be lessened, as well as that arising from the attrition of the two glass surfaces, even though the stitched sclera lies between them.

DR. R. C. HODGES, Houston, Texas—It strikes me, from my understanding of the technique of Mules' operation, that Dr. Lautenbach has his diagram reversed.

DR. L. WEBSTER FOX, Philadelphia, Pa.—I think Dr. Lautenbach does not quite comprehend the operation from his remarks upon the instrument. The ball is covered by the sclerotic just as a baseball is inclosed within leather. The cases I have examined show it to be one hard body with the sclerotic surrounding it and the conjunctiva in front. As to the breaking of these balls, the Indian boy of whom I spoke, received a hard blow and the eye was broken but not the glass ball. No ordinary blow would break one I am sure.

HISTOLOGIC AND BACTERIOLOGIC NOTES ON THREE CASES OF PENETRATING WOUND OF THE EYEBALL, AND SOME OBSERVATIONS ON CERTAIN BACILLI FOUND IN A CASE OF POST-OPERATIVE PAN-OPHTHALMITIS.

Read in the Section on Ophthalmology, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY G. E. DE SCHWEINITZ, M.D.

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In spite of numerous investigations, the exact nature of sympathetic ophthalmitis is not known, nor is the path of the morbid changes which precede the inflammation certainly ascertained, although the older hypotheses have largely been abandoned since 1881, and the disease ascribed to microbic origin. Three more or less distinct theories exist:

1. *The "Nerve-Irritation Theory"* which, in a modified form, has been maintained by Schmidt-Rimpler thus: irritation of the ciliary nerves in the injured eye by means of disturbance in the circulation and nutrition, contrived in a reflex manner, is solely responsible for the disposition to sympathetic inflammation in the other eye. The longer the changes have existed and the more widespread they are, the better prepared is the soil for action of the inflammation-producing injurious agents, which may be microbic or chemic in nature.

2. *The "Migration Theory,"* the chief advocate of which is Deutschmann,[1] who thus states it: sympathetic inflammation is a process of microphytic origin, progressing in the continuity of tissue from one eye to another, through the optic nerve apparatus; exceptionally a pure chemic process in the first eye may pass by the same route to the second.

3. *The Theory of Infection*, which is inclined to accept microbic influence as the most reasonable explanation of the characteristics of sympathetic inflammation, but which is not committed to the character of the microörganisms, the methods by which they enter the circulation, or the path along which they travel.

Perhaps a fourth belief ought to be mentioned, viz., that it is not the microörganisms but their metabolic products passing through the lymph streams which are responsible for the disease.

If the ciliary nerve idea is disregarded (and there seems the least evidence in its favor, although it is not disproved), Deutschmann's migration theory is the most attractive. Unfortunately, however, a number of researches by the most competent observers, notably Gifford, Mazza, Randolph, Limbourg, Levy and Greeff have failed to confirm his views,[2] and there seems little doubt that in the present state of our knowledge, rabbits, as Greeff asserts are useless in this class of experiments, and probably other animals as well (dogs and guinea pigs). Even if germs are conceded as the cause of the morbid process, it would be practically impossible, as Schirmer points out, accurately to determine the route, unless we could recognize them with the microscope and examine the entire cranial cavity and contents of both orbits in a recent case of sympathetic ophthalmitis in man.

At present we must be content with the somewhat indefinite "theory of infection."

To the cases of penetrating wound of the eyeball, causing the conditions usually seen in connection with sympathetic ophthalmitis, I desire to add three observations, bearing upon this subject:

Case 1.—Traumatic irido-cyclitis, with retained foreign body in the left eye; sympathetic serious iritis of the right eye. History: H. A., a man, aged 29; eleven weeks before admission to the Jefferson Medical College Hospital, was injured by a piece of steel striking the left eye, and was sent for treatment by Dr. Hollenbach, of Shamokin.

The injury consisted of a large cut through the upper ciliary region, which healed with a puckered cicatrix; the iris was inflamed and bound down to the capsule of the lens, and the anterior chamber shallow; the eye was sightless, slightly shrunken, soft to the touch and tender on pressure.

There was moderate congestion of the right eyeball, the circumcorneal zone being tinted with a finer injection of pink hue; faint haze in the lower half of the cornea; few dots of exudate on its posterior layers, and one soft posterior synechia. Vision was normal, the field of vision uncontracted and the optic nerve intensely hyperemic. These symptoms continued to increase in spite of early treatment, until the full development of serious cyclitis was attained. The excitor was enucleated and the usual treatment for iritis continued.[3]

Anatomic examination: the eyeball, beginning to assume a quadrate shape, was opened and the retina was found detached, the ciliary body thickened, the vitreous puriform, and a piece of steel, 12 millimeters in length and 3 millimeters in width, was discovered lying in the long axis of the eyeball, stretching between the posterior surface of the lens and a point near the optic nerve entrance, entangled in the meshes of the detached retina and disorganized vitreous.

Microscopically, the following lesions are present: the wound of entrance in the upper part of the cornea is closed with young scar tissue (connective tissue and lymphoid cells), covered on the corneal end by epithelium and pierced in its upper part with large blood vessels. Passing backward, this plug of tissue divides the iris into two portions, respectively attached on either side, and terminates in a mass of tissue composed of round cells, spindle-cells, leucocytes, pigment granules and blood corpuscles held in a matrix of organizing and organized elements (connective tissue), which passes through the length of the globe and ends in the sclera just above the entrance of the optic nerve. In the center of this mass is a groove, marking the position occupied by the foreign body.

The iris is infiltrated with young cells, the ciliary body shows plastic cyclitis, with foci of denser infiltration near the ciliary processes and in the choroid (somewhat broken and detached) the same infiltration is sparsely present; but scattered through it, especially in the neighborhood of large blood vessels, are numerous circumscribed collections of densely stained round cells.

From the head of the optic nerve proceeds an outgrowth composed of the remains of the detached retina and connective tissue containing numerous round cells. In the papilla itself and the nerve, darkly stained nuclei are more numerous than in the normal condition, but this is not a marked feature.

The ciliary nerves, as they pass through the sclera posteriorly, are much infiltrated with young cells lying within the nerves and surrounding them; also with many pigment granules from the choroid.

Summary: Adherent corneal cicatrix; plastic cyclitis, with infiltration of the choroid (malignant uveitis); inflammatory exudate in the vitreous; slight papillitis and neuritis of the ciliary nerves.

Bacteriologic examination: the specimen was not examined for bacteria by culture method; but microscopically in suitably stained section microörganisms are not to be found.

Case 2.—Lacerated wound in the upper ciliary region; irido-cyclitis and cataractous lens of left eye; sympathetic uveitis of right eye; marked constitutional disturbance. History: G. W. W., a man, aged 57; nine weeks before admission to the Jefferson Medical College Hospital, was struck in the left eye by a fragment of stone, causing a wound in the upper part of

[1] Ophthalmia Migratoria, Hamburg und Leipzig, 1889; also Beiträge zur Augenheilkunde, x, Heft, 1893.

[2] The accuracy of these is again asserted by Deutschmann in a recent critical review of the subject, "Beiträge," loc. cit.

[3] The ultimate result was cure in a month, and more than a year after the inflammation the eye was entirely normal.

the cornea, and came under the care of Dr. G. H. Woods, of Pine Grove Mills.

The patient was refractory, and in spite of his physicians' advice, exposed himself to inclement weather. Severe iritis followed, which under Dr. Wood's treatment subsided in about two weeks. Then a relapse occurred, associated with several styes upon the upper and lower lid, vision rapidly failed, and in the fourth week after the accident the right eye began to show signs of inflammation and disturbance of vision. From the very first, the patient suffered from violent headache and began to lose flesh. The urine contained a trace of albumin. Slight derangement of intellect was noted eight weeks after the accident.

When he came under my care in the Jefferson College Hospital, the following notes were made: V. of O. D. equals qualitative light perception; pupil semi-dilated from use of atropin; a ring of pigment on capsule of lens; iris thickened and discolored; numerous dots on posterior layer of cornea; lens partially opaque, and vitreous full of dark opacities. V. of O. S. equals light perception; T. slightly minus; marked ciliary injection; lens cataractous; anterior chamber deep; wound in the upper part of the cornea, extending up and in through the ciliary region for 1 centimeter, and iris prolapsed into the wound and adherent to its margins.

The patient had suffered much pain and had lost forty pounds in two months. He was demented and suffering with various hallucinations; there was almost complete anorexia. He was emaciated; the skin was harsh and dry; the tongue heavily furred; the bowels obstinately constipated, and the urine contained a trace of albumin.

The left eye was enucleated, after consultation with Dr. W. Thomson, and the patient put upon mercurial inunctions, potassium bromid, and hyoscin at night to control talkative delirium. The general condition vastly improved, but practically no change for the better had occurred in the right eye when he left the hospital, six weeks later.

Bacteriologic examination: Dr. D. Braden Kyle very kindly attended the operation, and as soon as the eye was removed he inoculated, with the usual precautions, serum and glycerin gelatin agar tubes, 1 from the divided end of the optic nerve; 2, from the intervaginal space of the nerve. These tubes remained sterile, with one exception, in which a growth of cocci appeared, no doubt due to accidental contamination, as other tubes inoculated from the same place failed to show any growth. Suitably stained and serially cut sections were entirely free from microörganisms.[4]

Histologic examination: the cornea and the superficial epithelium are intact, except at the upper corneo-scleral junction where there is a purulent infiltration of the superficial layers. The neighborhood of the wound is infiltrated with young cells and wandered-in pigment granules.

The iris is swollen to twice its normal size and infiltrated with small round cells, a similar infiltration affecting the ciliary body and processes, in the former structure collected here and there into dense foci. Scattered throughout these tissues are many pigment granules and branched pigment cells.

From here, the process may be traced to the choroid, throughout which there is a diffuse collection of round cells (purulent infiltration). For the most part the lamina vitrea is intact.

The retina is detached and although not free from change, as it exhibits scattered areas of infiltration, it is generally of better constitution than would seem likely from the extensive lesions existing elsewhere.

The vitreous, where it remains, is a mass of leucocytes.

The papilla is swollen, and contains extensive infiltration of leucocytes and darkly stained small round cells. Similar cells surround the distended blood vessels and the increased number of nuclei can be traced along the nerve, the process, however, growing less distinct as it departs from the scleral opening. In the intersheath may be found inflammatory material.

The ciliary nerves as they pass through the sclera are inflamed, and their sheaths contain many inflammatory corpuscles.

Summary: corneo-scleral wound containing much uveal pigment; malignant uveitis, the choroid exhibiting an early stage of purulent infiltration; papillitis and infiltration of the optic nerve and its sheath; neuritis of the ciliary nerves.

Case 3.—Penetrating wound through the upper ciliary region with retained foreign body (piece of steel) in the vitreous; beginning purulent irido-cyclitis on the fourth day after injury; no signs of trouble in the opposite eye. History: S. M., a man, aged 25, was admitted to the Jefferson Medical College Hospital on account of an injury to the left eye caused by a piece of steel striking the organ. There was a lacerated wound in the upper ciliary region, the lens was partially dislocated and beginning to become cataractous, and there was a slight gray infiltration of the wound. The eyeball was collapsed from loss of vitreous and slightly tender to the touch, careful palpation revealing a spot of induration in the upper portion marking the probable situation of the foreign body.

Many attempts had been made by his fellow workmen to extract the foreign body, or what they supposed to be the foreign body, which was probably some fragments of uveal pigment, and the wound was no doubt thoroughly infected before the patient presented himself for treatment. Two days later he gave consent to enucleation, the first signs of purulent iritis being already present. Therefore the eye was removed on the third day after injury.

The right eye was normal in all respects and showed no signs of sympathetic irritation.

Bacteriologic examination: Dr. D. Braden Kyle very kindly consented to be present at the operation, and under proper precautions inoculations into serum and agar tubes were made from: 1, the divided end of the optic nerve; 2, from the intervaginal space of the nerve; 3, from the interior of the vitreous; 4, from the area surrounding the wound of entrance; and 5, from the foreign body. Dr. Kyle reports as a possibility, that the material from the sheath of the nerve may have come in contact with the nerve itself during the act of inoculation, although precautions were taken to prevent this. He also states that the interior of the eye was exposed a little longer than is proper to insure the absence of infection from without.

Growths appeared in all the tubes, which proved to be staphylococcus cereus albus and staphylococcus pyogenes citreus. In one tube, inoculated from the interior of the eye, in addition to the germs already enumerated, the bacillus pyocyaneus was found. Suitably stained sections made by Dr. Gray, of Washington, exhibit here and there cocci in the purulent areas. None, however, are to be found in the optic nerves or the intersheath.

Anatomic examination: when the eyeball was opened, the foreign body was found lying in the upper portion, partly imbedded in the ciliary region and extending backward through the whole length of the eyeball. The vitreous was purulent, and there was a collection of pus on the surface of the iris and ciliary body.

Microscopically, the following lesions are present: the remains of the lens fibers are swollen and opaque and between them lie numerous round cells (inflammatory material). The lenticular remnants are attached to the margin of the iris.

This structure is infiltrated with young cells—leucocytes and red blood corpuscles. A similar infiltration is present in the ciliary body and the connective stroma of the ciliary processes; in the latter tissue the infiltrating cells being chiefly situated at the inner layers toward the choroid.

The vitreous is purulent, being represented by masses of pus corpuscles and leucocytes.

The choroid does not exhibit general infiltration, but in the inner layers of the chorio-capillaris are dense foci of round cells.

The retina, detached and broken, exhibits in a beautiful manner, disseminated infiltration with red blood corpuscles in its inner and outer molecular layers. In places the fiber and ganglion layers are not distinguishable and are infiltrated with pus corpuscles similar to those in the adjacent vitreous.

The surface of the papilla is slightly infiltrated and there is some increase of nuclei and round cells in the nerve itself. The intersheath is free from exudate.

The ciliary nerves, as they pass through the posterior portion of the sclera, do not appear to be involved.

Summary: acute irido-cyclitis (hemorrhagic and purulent), with inflammatory exudate in the lens; beginning purulent choroiditis; hemorrhage into the retina; slight secondary papillitis.

Remarks: the following points seem worthy of emphasis:

1. The *Absence of Microörganisms* in the two cases which caused sympathetic ophthalmitis, (Case 1 and Case 2), the exciting eyes presenting perfect types of the lesions which are capable of originating this disease.

[4] Dr. Wm. Gray writes in regard to these sections: "The technique was carefully guarded by a control stain on other tissues."

Experience in this line of research has differed widely. Deutschmann, for example, has rarely failed to find organisms in an eye enucleated to avoid sympathetic affection of the fellow eye, while Randolph[5] has examined a score of such eyes and has succeeded only once in detecting microörganisms. He quotes Ohlmann's examination of thirty eyes enucleated under similar circumstances, bacteriologic investigation being negative in all of them. Greeff[6] has carefully investigated fourteen cases of resection of the optic nerve, the period between the injury and the operation ranging from three weeks to three months. In each instance the operation was resorted to for fear of an outbreak of sympathetic ophthalmitis. No organisms were found in either the optic nerve or its sheaths. Similar results have been reported by other observers. On the other hand, C. E. Finlay,[7] in a careful examination of the material furnished by Dr. Knapp's laboratory, had nine positive results from the interior of the eyeball and two from the intervaginal space, in a total of nineteen cases.

Two of the cases now reported are another addition to the negative list, and have value from this standpoint, as well as from the fact that all of the details have been carefully observed from the beginning to the end.

In the third case, sufficient time had not elapsed to produce the signs of sympathetic trouble, although the microscopic lesions of the injured eye indicate that such a condition would have occurred had preventive enucleation not been performed. It is a positive result in so far as finding the germs of suppuration is concerned, both in sections and in cultures made from the tissues immediately after the operation. But this is exactly the result to be expected; the organisms were present, precisely as they would have been in any other active suppurative process. Furthermore, proof is lacking (Greeff, Schirmer) that the germs of suppuration are the active agents in the production of sympathetic ophthalmitis, although it is just these germs that have been most often found; hence the positive nature of the examination loses its distinction.

2. The *Neuritis of the Ciliary Nerves*, especially in the first case. A similar condition has been found in a number of instances—Finlay[8] ten times out of twenty-five cases and Berger, whom he quotes, nine times out of fourteen cases. Brailey[9] sums up his examination of the conditions of the ciliary nerves in sympathetic disease as follows: inflammation of the ciliary nerves is not an essential factor in its production. Indeed, it is doubtful whether it can ever be a cause, since it is not infrequently entirely absent, both in the exciting and the sympathetically affected eye and may be present in cases of retinochoroiditis, which neither have produced, nor, judging from their microscopic characters, are likely to produce sympathetic disease.

3. The *Constitutional Disturbance in Case 2*—headache, fever, delirium, emaciation—almost a typhoid state. One of the chief objections to the theory that the metabolic products of the organisms, and not the organisms themselves, set up the inflammation, is the absence of febrile manifestations, which should be present if toxalbumins are at the basis of this trouble. Greeff[10] refers to this point particularly, and largely on its account can not reconcile himself with this idea. He quotes Pflüger as having seen a case of sympathetic ophthalmitis with violent headache and fever—an isolated instance which he does not regard of value. In the present case, observed for a long period of time, constitutional disturbance was a marked feature, and there seems no other cause except the injury to the eye. It is not improbable that careful investigation of the temperature, pulse and respiration in cases of sympathetic ophthalmitis would reveal analogous conditions more frequently than the records seem to indicate.

Certain Bacilli Found in a Case of Post-Operative Panophthalmitis.—D. S., a man, aged 55, was admitted to the Jefferson Medical College Hospital, Oct. 1, 1894, on account of complete cataract of the left eye and beginning cataract of the right, the vision of the latter being 6–9, with large flocculi forming in the periphery of the lens. The light field of the left eye was slightly defective upon the nasal side and the central perception not as acute as might be desired. The iris reactions, however, were prompt, and the anterior chamber of normal depth. The tension was a trifle below the average resistance. Extraction was performed, with the usual antiseptic precautions, on October 5, but before the knife was half across the anterior chamber the patient became absolutely unruly. The section was quickly completed and the lens delivered, but owing to the spasmodic contraction of the recti muscles, together with the squeezing of the lids together, a large quantity of semi-fluid vitreous was lost. The patient, perfectly uncontrolled, twice swept the margin of his upper lid through the incision.

On the second day a gray infiltration of the edge of the wound was visible, and in spite of the most active treatment, proliferation of the vitreous occurred, the eyeball becoming intensely hard and a thick whitish mass appearing between the lips of the wound and in the anterior chamber. Twelve days later evisceration was performed and the thick purulent mass from the center of the eye was placed in a carefully-stoppered, sterilized bottle for bacteriologic examination. The lower half of the cornea, which had remained clear, was similarly treated.

Bacteriologic examination: Dr. D. Braden Kyle kindly undertook the bacteriologic examination and isolated a rod-like bacillus, uniform in size, slightly rounded at the ends, which stains easily with any of the anilin dyes, but better with methyl blue. There was also a coccus present, which upon isolation proved to be the staphylococcus pyogenes citreus.

In order to investigate the matter still further, cultures were sent to Dr. E. A. de Schweinitz, of the Bio-Chemic Laboratory of Washington, for his opinion, and he returned the following report: "The bacilli are from three to five times as long as broad, often growing in chains, or several of them are joined together. They grow on beef broth, and after twenty four hours a pedicle is formed on the surface. They also grow on gelatin, but do not liquefy it, and form a white film on agar. They do not produce gas in the fermentation tube. They slowly coagulate milk, and grow on potato, forming a thick, yellowish reticulated layer. They liquefy blood serum slowly."

[5] Archives of Ophthalmology, vol. XXI, p. 373.
[6] Archives of Ophthalmology, vol. XXII, p. 298.
[7] Archives of Ophthalmology, vol. XXI, p. 457.
[8] Loc. cit.
[9] Transactions of the Ophthalmological Society of the United Kingdom, vol. V.

[10] Loc. cit.

In order to test the pathogenic character of this bacillus, injections of an emulsion of the surface growth on agar in beef broth were injected into rabbits' eyes by Dr. de Schweinitz, in Washington, and by Dr. Kyle and myself in Philadelphia, with entirely negative results, no more irritation being produced than would be expected from the slight wound of entrance. When, on the other hand, a mixed culture was employed, namely, one containing the cocci, reaction was prompt and the ordinary phenomena of suppuration appeared.

Bacilli have been found in panophthalmitis in a number of examinations, in some cases being associated directly with the development of disease from the pathogenic standpoint.

Dr. S. Poplawski,[11] in an investigation of the etiology of inflammation of the eye after injury, examined twelve eyeballs with beginning panophthalmitis and found bacilli in eight of them, always in the vitreous in the neighborhood of the foreign body. There were two forms; a small, slender form with no disposition to chain formation, and a large long form.

In Finlay's group of cases[12] in one instance a bacillus was cultivated both from the intervaginal space and from the interior of the vitreous. The patient suffered from panophthalmitis incipiens as the result of a perforating wound in the ciliary region. The following is the description which Dr. Finlay gives of this growth: "The bacillus was about 7 m. long, being rather slender. In cover-glass preparations, made from the growth in gelatin, they were arranged in zoogleic masses. The bacillus was cultivated in gelatin, agar and potatoes. In gelatin it developed with the utmost readiness, liquefying it with extreme rapidity almost as soon as it made its appearance; when planted in second and third generations the gelatin would be totally liquid in twenty-four hours. In a partially anærobic culture (made by pouring a layer of sterilized oil on the surface of the gelatin after making the puncture), the liquefaction took place much slower, not beginning for months, the growth being somewhat peculiar; from the central stem four peculiar processes were given out, which were arranged crosswise; however, the growth was totally liquefied. In agar, the bacillus thrived both in its interior and on its surface; in the latter situation it had a peculiar white waxy appearance. On potatoes the growth at first was yellowish, but ultimately acquired a chocolate-brown color, resembling somewhat that of the glanders bacillus." The pathogenicity of this bacillus was established by inoculation into the vitreous of a rabbit.

Professor Haab has also found a peculiar bacillus in panophthalmitis to which he attributes a specific character.

An interesting case is reported by Randolph[13] in a boy aged 6, following a penetrating wound of the ciliary region made with a piece of wire. Inoculation and control experiments proved that the organism which caused the inflammation was the bacillus coli communis, which entered either with the foreign body, or, later, through the wound.

The present bacillus can not be classed with those of pathogenic character, as experimentation proved its innocuousness. The possibility of contamination with pathogenic cocci must be carefully guarded against in these examinations before ascribing the suppuration to the bacilli, because staphylococci may also be present, as, for example, they were in the case which I report.

The piece of cornea, which was removed, is of practically normal constitution, the upper margin containing some lymphoid infiltration. Suitable stains failed to demonstrate microörganisms in the tissue.

[11] Archives of Ophthalmology, vol. XXI, p. 22.
[12] Loc. cit.
[13] American Journal of the Medical Sciences, N. S., 106, July to December, 1893, p. 440.

DISCUSSION.

DR. R. L. RANDOLPH, Baltimore—I have been much interested in the paper just read, not only on account of its own value but because the author's investigations were made along a path that I have traveled myself during the past two years. Panophthalmitis presents a typical picture of a suppurative inflammation, and one would think that as such the staphylococcus aureus or albus, or certainly some one of the so-called pus organisms would be revealed by a bacteriologic examination. Such, though, has not been the case. Haab and his assistant, Poplawski, report thirteen cases of panophthalmitis, and in every case a bacillus was found to have been the cause of the inflammation. Two years ago I reported a case of panophthalmitis caused by the bacillus coli communis, the latter organism being found in the eyeball in pure culture. The paper of Dr. de Schweinitz just read, also records the finding of a bacillus. It is difficult to explain how the bacillus in pure culture is usually found. We know that the conjunctival sac is the resting place for various kinds of bacteria, and it is not likely that simply one kind of organism passes into the eye, and that always a bacillus. Maybe the bacilli as a class are of a hardier nature and of more luxuriant growth than the micrococci, and the latter, though present in the eyeball, are crowded out and finally supplanted by their stronger brothers. It is singular too, to note the fact that the bacilli found in most of these cases are to be regarded as, comparatively speaking, harmless organisms. They are not truly speaking pathogenic organisms, and yet when introduced into the eyeball they produce the most intense and destructive form of inflammation. When introduced into the conjunctiva the reaction is insignificant. These facts among others go to show that there are many organisms other than the so-called pus organisms that are capable of producing suppuration, and that organisms ordinarily harmless, possess sometimes marked pathogenic properties.

DR. HAROLD GIFFORD, Omaha, Neb.—The opinion in regard to the cause of sympathetic ophthalmia seems to be changing, as is the result whenever a new theory is found. The pendulum is swinging away from the germ theory and I can not but feel that it is a retrogressive step. Dr. de Schweinitz found foci of inflammation in his cases,—what caused them? What could produce it but the bacteria or the toxins produced by them? In these eyes the germs were not found, but that does not necessarily show that they had not been present. If any of you have examined eyes bacteriologically, you realize how difficult it is to find these germs. When staining for germs in the tissues, even the tubercle bacilli is very hard to find. There are two points to be considered: first, in this region wounds are very common. Bacteriologic examinations after experiments upon rabbits' eyes, show that the tissues of the ciliary bodies are most excellently suited to the growth of germs. As Dr. de Schweinitz remarked, a number of these experiments have failed to confirm Deutschmann's results in this matter. I failed to find them in any case in the optic nerve region, but did have them in the ciliary processes in large quantities. In the other parts of the eye, you will find them comparatively scarce. This may indicate one reason why wounds in the ciliary region are so dangerous. How can you account for an inflammation which starts in an eye, creeps along and produces all the disturbances that follow upon any ciliary nerve theory? In regard to the germs found in eyes with panophthalmitis, I have been surprised in many cases at not finding the germ I was looking for, but in a number of them did find what looked like Sternberg's diplococcus, more generally known as Fraenkel's. I failed to find them in stained preparations. In one case I had a short time ago I found pus germs. It seems to me a very important point to bring out here, is the resisting point of bacilli. You all know that bacilli are more likely to have spores than micrococci, and are more resistant to antiseptics. In noting the precautions

taken for operations, I find such remarks as this: "Instruments dipped into boiling water" or "put into 2 per cent. carbolic acid solution." I think we should not be content with less than five minutes' boiling. Pus cells may be killed in one minute, but we should not only take account of these germs, but also the possibility of germs that have spores.

HEMORRHAGE INTO THE RETINA AND VITREOUS IN YOUNG PERSONS ASSOCIATED WITH EVIDENT DISEASE OF THE RETINAL VEINS.

REMARKS ON THE FORMATION OF VESSELS IN THE VITREOUS AND ON THE MIGRATION OF A SUBHYALOID HEMORRHAGE.

Read in the Section on Ophthalmology, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

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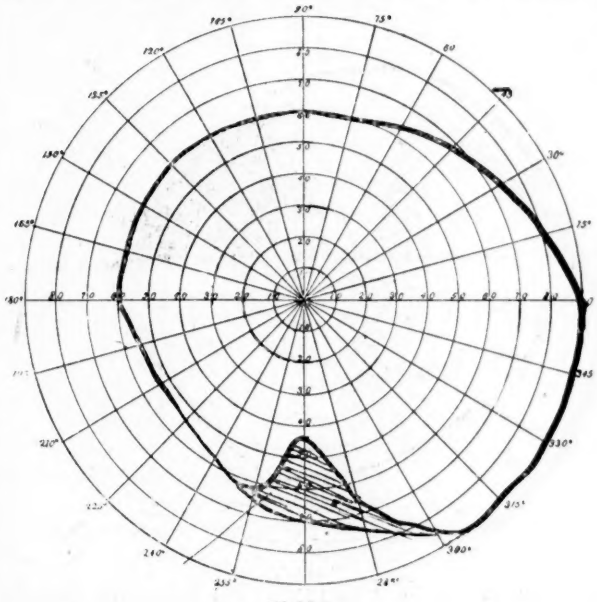
Hemorrhages into the retina and vitreous are due to an alteration and loss of resistance of the vessels, to changes in the composition of the blood, to disturbances in the circulation or to a combination of these factors. In many cases, however, it is difficult to determine the immediate defect which led to the extravasation. In the interesting class of retinal and vitreous hemorrhages which occur in young persons between the ages of 12 and 24, which have a tendency to recur and to impair vision to a great extent—in these cases the retinal blood vessels have never, so far as I have been able to find in reviewing the literature, been found to present any signs of disease. In the two cases which will be reported in this paper, the disease of the retinal veins was evident and important. Beside this, the unique observation was made of a subhyaloid hemorrhage migrating from a point above the macular region to a point below the macula; in so doing, it curved around the macula in such a definite manner as to clearly demonstrate the intimate union between the retina and the hyaloid membrane around the macula—a question about which varying opinions have been expressed. Another observation of interest was the development of fine blood vessels in the vitreous, which gradually increased and ultimately grew into large connective tissue masses.

Case 1.—A., aged 15, a healthy robust young man complained (Dec. 12, 1892) of slight pain in the eyes. He had noticed the occasional appearance of fiery balls before the eyes for several months. There was no history of previous eye-trouble, excepting a slight blow on the eye about four years previously; this had not been followed by any permanent impairment of sight. His general health had been excellent, but he had had intermittent fever; first, about six years ago, and then again slight "dumb" chills during the previous summer. The central vision of the right eye was 8-8 and almost as clear as that of the left. The field of both eyes was normal, excepting a small defect in the right, at the foot of the vertical meridian (see Field 1). There was slight hypermetropia, (0.5 D.s.). The ophthalmoscopic examination showed that the left eye was perfectly healthy. In the right, there were numerous peripheral hemorrhages, especially in the upper part of the retina. These were all in the form of small dots and spots; there were no large extravasations. The papilla and the central portion of the retina were normal; the arteries presented no decided changes, excepting slight fullness and tortuosity; but the veins were much distended and the smaller ones were very tortuous. The patient was seen frequently but no changes were noted until Jan. 3, 1893, when a large hemorrhage was found to have made its appearance in the upper part of the retina; its occurrence had been preceded by the appearance of fiery spots. On the following day it seemed to have changed its position to a part lower down in the retina. An accurate sketch was made at this time and certain other changes were noted. (See Fig. 1). The large effusion was now situated above and to the temporal side of the papilla, its lower edge was about 1 P.D. from the upper edge of the very distinct macular reflex. The effusion completely hid the underlying blood vessels, which appeared sharply broken off at its margin. The upper edge was a perfectly horizontal line. The lower margin was made up of irregular curves. The arteries appeared unchanged, but decided alterations were noted in the veins. The vena temp. super. which was greatly distended, ended abruptly in two very small and very tortuous branches. At this point there was a curious twist, shown in the drawing; in its course it gave off a large number of fine branches. The vena. temp. infer. was not only over-distended, but showed a marked difference in its caliber at various points. Soon after leaving the papilla it widened out but became narrower again, before dividing into its two branches. The branch running toward the temporal side ended in very tortuous twigs. The vena nasal. infer. was not greatly congested as were the two former. At one point it presented a constriction so great as almost to divide the blood vessel, (D). A small bluish spot (A) was seen lying upon the vessel and resembled a little cloud. The congestion of the retina was likewise shown by the appearance of numerous fine vessels throughout the retina; one set lay below the macula and was apparently not connected with any of the other retinal blood vessels, (C). The vessels of



Field 1.

the superior nasal quadrant were normal and there were no hemorrhages in this region. V. R. E., 8-8; V. L. E., 8-6. There was a small scotoma between 5 and 10 degrees beneath the point of fixation.

January 6, I was surprised to find that the large hemorrhagic plaque had migrated to a lower point and was lying directly over the macular reflex; its lower edge was slightly concave and corresponded with the convexity of the upper margin of this reflex. (See Fig. 2.) The hemorrhage was bounded above by an almost perfectly straight and horizontal line; at the nasal end this ran out into a set of linear hemorrhages which united the large effusion with the hemorrhages in the upper part of the retina. The area occupied by the effusion two days before was now apparently normal. There were dust-like opacities in the vitreous.

January 10, the hemorrhagic effusion had sunk still lower and had become divided into two parts, united by an irregular line. A small portion, (see Fig. 3, E.) occupied the former position in the form of a narrow band, whose lower edge fitted closely to the reflex of the macula in its upper and outer portion. The greater part of the effusion occupied a position to the temporal side of the macula and beneath it. (See Fig. 3, F). It was not regular in form but its upper margin was mainly formed by a straight horizontal line. A fresh vitreous hemorrhage had occurred from the upper and temporal portion of the retina. (Fig. 3, G.)

January 12 there was but a fine hemorrhagic line remain-

ing as a margin of the upper border of the macular reflex. The line of hemorrhages which united the two parts of the effusion and the hemorrhages in the upper part of the retina, had to a great extent disappeared; only a few points were left to indicate its position. A number of white spots were seen among the hemorrhages in the upper part of the retina.

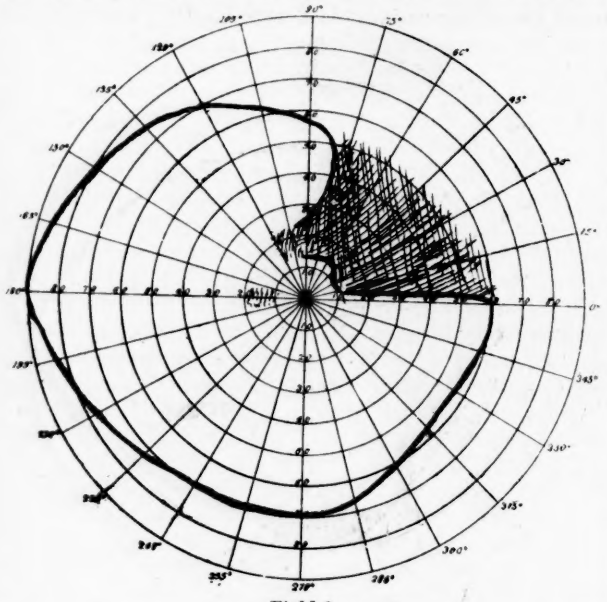
January 16, fresh hemorrhages had again occurred; a fine linear hemorrhage lay in the inner macular region; a large effusion reached partly into the vitreous below. (See Fig. 4). The vena nasal. super. presented a fusiform dilatation at some distance (3 to 4 P.D.) from its origin. Central vision was almost perfect, but sight was somewhat disturbed during the past few days by a dark brown crescent-shaped cloud moving before the eyes.

January 22, the hemorrhages below the macula had so far diminished in size as to become lines resembling fine blood vessels.

January 30, at the point where the vena temp. super. ended in two fine branches, a veilly formation made its appearance; it was formed of a delicate network of blood vessels, lying in the vitreous. (See inserted in Fig. 4.)

February 11, there was a fresh hemorrhage in the lower inner periphery of the retina; the old hemorrhage below the macula had entirely disappeared; V. R. E. still 8-8.

March 5, the vena nasal. infer. showed peculiar changes. About 2 P.D. from its origin, it sent off a large number of fine capillary vessels, which formed a meshwork in the vitreous. (Inserted in Fig. 4, at A). At this point there was the appearance of a bend or twist in the vessel. A short distance beyond there were two thickenings, which upon close examination were seen to be twists in the vessel. (Fig. 4, H. H.) Beyond these points the vessel became exceedingly attenuated for about 1 to 2 P.D., then widened out and divided into fine twigs. On one of these there was a distinct round elevation. (Fig. 4, J.) This upon careful observation, was found to be a varicose dilatation; upon pressing on the eyeball, the dilatation visibly *diminished in size.* One of the fine branches arising from the vena temp. super. had become very tortuous and ended in a bunch of blood vessels reaching into the vitreous. The vena nasal. super. was now very tortuous, had marked variations in its caliber, (dilatations and constrictions), and was covered in the periphery by a hazy gray cloud.



Field 2.

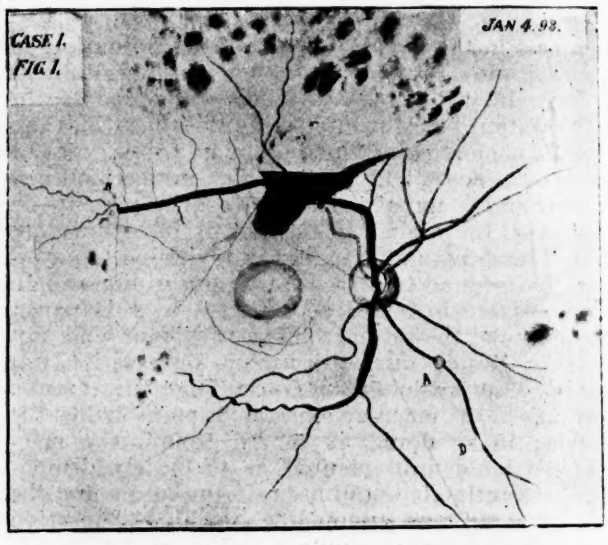
March 28, the vascular veil arising from the vena nasal. infer. had greatly increased in size and now reached the lower inner margin of the papilla; (best seen with 2 Ds). The vascular formation on the vena temp. super. had likewise greatly increased in size and now contained some whitish connective tissue. V. unchanged. Since the last visit the patient had had a recurrence of the intermittent chills; on March 17 and 19 they were severe; he then began taking quinin and was relieved.

April 7, V. R. E., 8-6 almost. The hemorrhagic spots in the upper part of the retina had almost entirely disappeared; there were no fresh hemorrhages. The vitreous still contained fine dust-like opacities.

April 21, sight was unchanged until this morning. On the preceding day he had been sparring for some time. While reading the paper in the morning, he noticed the appearance of arrows, (black and green), flying before the eye and then a veil. Sight rapidly became worse, so that when examined a few hours afterward he could count fingers at but three feet. With the ophthalmoscope it was evident that a large vitreous hemorrhage had occurred.

During the next few days the veil seemed to rise somewhat and V. L. E. became 8-50 (almost), by April 23. At this time the hemorrhages were visible on the nasal side of the retina and in the vitreous toward the temporal side and below. One of these seemed to have started from the upper, outer part of the retina. The vascular formations in the vitreous gradually increased in size. On May 18, the one on the vena nasal infer. had entirely crossed the papilla and extended beyond its upper outer margin. V. R. E. 8-18 partly.

Feb. 14, 1894, the patient returned after a long absence. He informed me that his vision had improved so much that he had been able to see as well with the right eye as with the left. But in September, 1893, he had had a recurrence of his malarial chills and his vision had become slightly worse. In December, 1893, he had again had a hemorrhage, which likewise slowly cleared up. A few weeks ago another hemorrhage had occurred and this had almost completely destroyed the vision of the right eye. He could but see movements of the hand in the outer part of the field.



At this time, (Feb. 26, 1894), he was thoroughly examined by my brother, Dr. Julius Friedenwald, who found all the organs healthy, (lungs, heart, kidneys, etc.; the urine had been examined a number of times before, with negative result). The examination of the blood showed that "there was a low percentage of hemoglobin, but that the number and variety of the red and white corpuscles were normal. The condition was therefore similar to that of chlorosis in the female."

There was a black reflex to the ophthalmoscope in all directions excepting in the innermost part where there was a narrow line of red. V. gradually improved and the red reflex became larger.

May 1, V. 6-60.

June 22, V. 8-36. Slight red reflex in the center of the pupil.

July 21, V. 8-12 (partly). The center of the dilated pupil is clear, but the periphery of the vitreous is in great part dark. Toward the end of 1894, V. again became worse but subsequently cleared though very slowly.

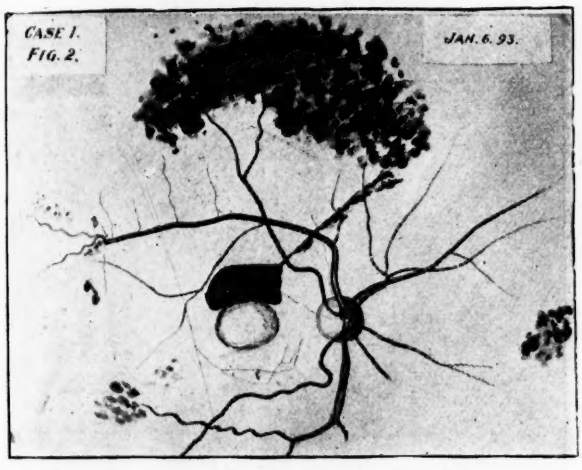
At the last examination, (April 18, 1895), V. with dilated pupil (atropia), 8-24; with —1 Ds. 8-18 and 8-12 partly. The eye now admits of ophthalmoscopic examination; the papilla is fairly clear; there are large masses of vascularized connective tissue in the vitreous, much larger than when last seen, presenting the picture of retinitis proliferans.

Concerning the treatment, of which no mention was made in the above history, we may state here that it consisted at first in the administration of ergot, later of iodid of potassium, of jaborandi and of qui-

nin. None of these remedies produced any decided or even appreciable effect on the course of the affection.

In following this case, it is evident that the hemorrhages were due to disease of the retinal veins.[3] The first appearance of the hemorrages, which were densest in the upper periphery of the retina was associated with a definite sector-like defect in the field of vision, which has never disappeared. It is quite probable that this was due to a thrombosis of a small venous branch in the corresponding part of the retina. The affection of the veins was demonstrated by the pathologic dilatations and constrictions and by the varicose formation.

The fine vascular loops which developed in the vitreous, started from greatly congested veins and at points where there was a twist of the vessel (A and B). While under observation no vitreous hemorrhages occurred at these points; the development of the blood vessels was not the result of a process of absorption of effused blood. It is difficult to account for their formation in this case, unless we assume that they resulted from the great engorgement of diseased veins. It is scarcely possible that they were an evidence of organization of vitreous opacities, for the



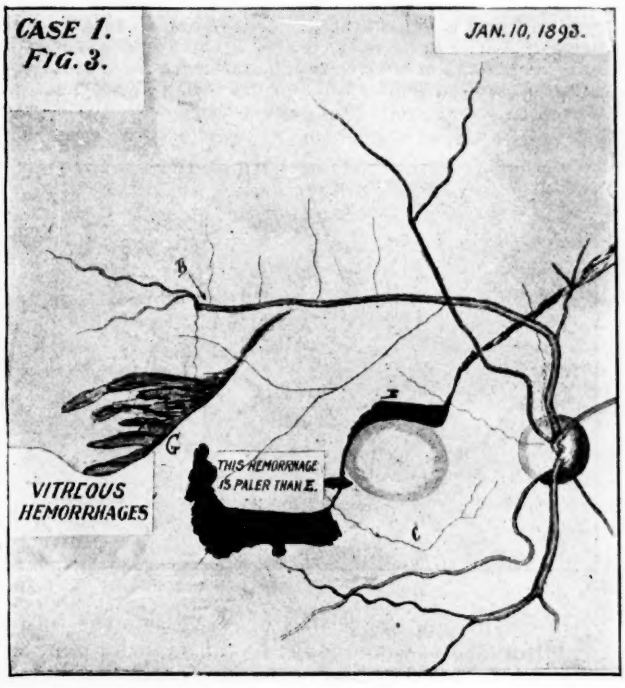
opacities which existed at that time were exceedingly fine and slight. As in a case which I have recently seen, and which I shall report at some later time, we may regard them as an evidence of vascular disease.

The fine, transparent vascular formations gradually and slowly developed into large connective growths, known as retinitis proliferans. This affection or rather condition is usually attributed to the organization of hemorrhages in the vitreous. (See *Leber Graefe-Saemisch's Handbuch*, vol. v, p. 666). Our case definitely showed that the vascular formation may be the beginning of retinitis proliferans. Connective tissue growths have been observed in other cases of juvenile vitreous hemorrhages.[4] In these cases the connective tissue was considered an organized blood clot.

Concerning the appearance of newly formed blood vessels in the vitreous, we may mention that but a small number of cases have been published and in these the vessels remained stationary or disappeared in the course of time. Their development into the connective tissue masses described above, has not been observed.[5]

A feature of great interest in our case lay in the subhyaloid hemorrhage. Its position between the retina and the vitreous admits of no doubt. These cases have recently been collected and studied by Haab,[6] Dimmer,[7] and Hotz.[8] The total number of these cases is not large. In one respect our case differs from all the rest, namely, in the distinct appearance of a firm union between retina and vitreous around the macula. That there is such a firm union in these parts has been assumed by Gunn, Nettleship, Lang and others to account for the circular form which subhyloid hemorrhages within the macula usually take on. But this assumption was weakened by the fact that subhyaloid hemorrhages in other parts likewise frequently have a similar form. In our case this union was proved by the form which the blood assumed in following the course of least resistance around the macula.

Our case undoubtedly belongs to that curious class of juvenile hemorrhages of which numerous cases have been published. No definite cause has been discovered for this affection, but a number of etiologic



factors such as anemia, constipation, dyspepsia, cardiac hypertrophy, etc., have been assumed. None of these, except slight anemia, were present in our case.

Malaria may have played an etiologic rôle. The patient had had malarial fever previous to the onset of the ocular affection and during its course; once a hemorrhage occurred at the same time as the chills. In view of the fact that there was no other etiologic factor and that a number of cases of retinal hemorrhage unquestionably due to intermittent fever, have been published, it is proper not to disregard this fact. In most of these cases,[9] however, the patients suffered with a severe form of the disease and frequently with marked cachexia.

The trauma referred to in the history occurred so long before and was so slight that no etiologic importance should be attached to it.

Case 2.—R. K., aged 22, male, consulted me Nov. 23, 1890. He had had good eyes and no constitutional disorders excepting measles in 1880, and typhoid fever in 1887. He had

never suffered any injury. There was slight but chronic constipation. Urine was normal. He related the following history, which was subsequently confirmed: on Oct. 14, 1889, while at dinner a veil suddenly appeared before the left eye, and in a little while there was scarcely light perception left. He was examined by a well-known oculist who found a vitreous hemorrhage. Sight improved, and in about three weeks he was able to distinguish persons and in six, he could read. In three or four months he considered the sight restored to its full extent (?)

Oct. 14, 1889, V. L. E., 8-18; V. R. E., 8-8. In the left field of vision there was a large defect occupying the upper nasal quadrant, evidently due to disturbance of the circulation in the inferior temporal vessels. (See Field 2.) Ophthalmoscopic examination: the right eye showed nothing abnormal in the retina and a fine floating opacity in the vitreous. The image of the left eye was very clear, the papilla was hyperemic, as was also the retina (unusually large number of fine blood vessels seen everywhere). A slender pillar of intensely white connective tissue was seen projecting from near the center of the papilla somewhat nasally, downward and forward into the vitreous. Through its whole length a few fine blood vessels could be traced. At the papillary origin a great number of very fine blood vessels were seen, forming slender loops in the vitreous. At the distal end (best seen with + 6 D.s.), another set of vessels extended far into the vitreous, and at the end of one of these there was a gray vitreous opacity of such a shape as to suggest its being a degenerated blood vessel. These vascular loops appeared to be entirely free from any connective tissue. The long connective tissue mass with its vascular outgrowths swayed gently to and fro when the eyeball was moved.

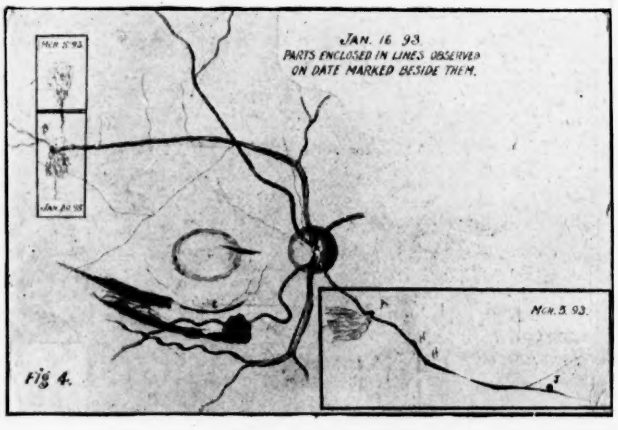


FIG 4.

On examining the retinal blood vessels the following observations were made: on the superior temporal vein, about 2 P. D. from the margin of the papilla there was a red spot, lying directly over the vessel; it was somewhat irregular in form and had a diameter of between two and three times that of the vessel upon which it lay. It had something of the appearance of a small hemorrhage with a faint whitish film over its central part. On close examination it proved itself to be a varix; upon pressing upon the eyeball its size would diminish until it almost disappeared, leaving only a small gray spot not extending beyond the margins of the vein. That there was no optical illusion was proved by the distinctness with which a fine blood vessel which ran into it was seen after the spot had almost entirely disappeared. The vein itself showed no abnormality except a slight constriction just beyond the varix; this was apparently due to a gray thickening of the walls.

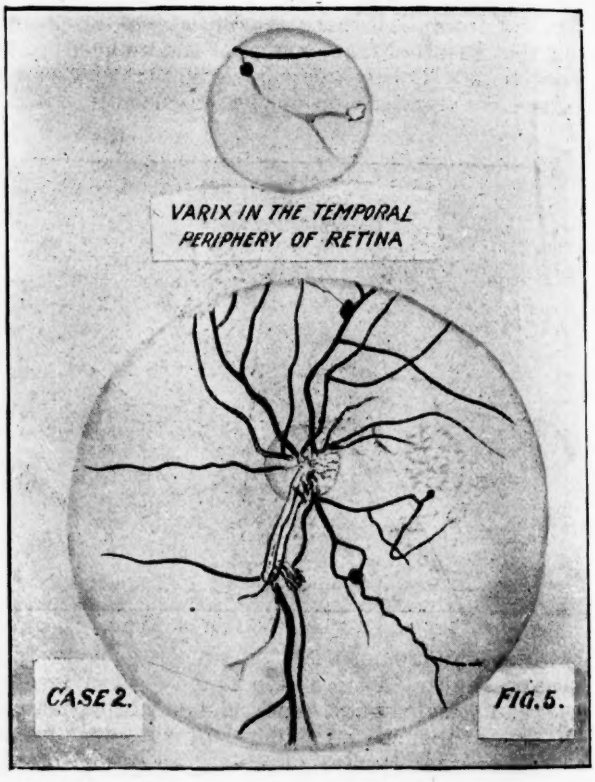
The inferior temporal vein presented a number of interesting points. About 1 P. D. from its origin it divided into two fine vessels which soon united in a large red spot; this had a diameter of between two and three times the caliber of an artery of the first order. Beyond this, the vessel extended for a long distance but was exceedingly tortuous. Near its origin the vessel sent off a fine macular branch, which in the macular region ended in a small rounded red spot. Far in the temporal periphery, a similar spot hung like an apple from one of the veins; a fine white thread, an obliterated branching vessel, extended from it to a spot of choroidal atrophy.

These red spots were all small varices; their size decreased decidedly on pressure on the eyeball.

In the macular region there were a number of gray streaks and spots (irregular reflexes?), and one little crystal.

At an examination about ten months later, no changes were noted in the picture described above.

This case is in many respects analogous to Case 1. The vitreous hemorrhage which had thoroughly cleared up when I first examined the patient, must



be ascribed to the diseased veins, as was seen in the varices and in the sclerosed vessel in the periphery of the retina. No cause can be assigned for these changes.

In this case, the connective tissue in the vitreous was probably of different origin than that in Case 1. It had all the appearance of being a cicatricial band resulting from the absorption of the hemorrhage. The development of the fine vessels in the vitreous, as outgrowths from the connective tissue band, may have been due to the same cause or they may have originated independently, as in Case 1.

As both of these cases presented such marked evidences of vascular disease, I am inclined to the view that hemorrhages of the retina and vitreous in young persons may often be due to similar conditions. Further observation will prove or disprove this view. It is but proper to mention that a careful search has

not resulted in finding any description in literature quite comparable to that observed in our cases.[10]

[1] Nieden observed a case of vitreous hemorrhage, in which emetropia developed into myopia (6 Ds.). Bericht der ophthalm. Gesellschaft, Heidelberg, 1883.

[2] Since the paper was read the patient has been examined a number of times. His vision continues to improve. August 26, 1895, V. R. E. 8-24—1.75 D.s. 8-8 almost. At this time there was a clear red reflex in every direction with but few grayish and translucent vitreous opacities; the image of the papilla was fairly clear. The vessels were normal, or slightly congested as far as they could be followed, some disappeared in the white connective tissue formations. The latter contained blood vessels which extended far forward into the vitreous. This improvement gave us great encouragement, but unfortunately on Oct. 14, he returned with a fresh vitreous hemorrhage, which had again reduced vision to the perception of light.

[3] The source of the vitreous hemorrhages under consideration has sometimes been placed in the retina, more frequently in the choroid.

[4] Jacobson, Mitheilungen a. d. Koenigsberger Klinik, 1880, reviewed in Nagel's Jahresbericht for 1880, p. 350; Proebsting, Arch. f. Ophthalm. XXXVIII, 3. p. 114; Raab, Arch. f. Ophthalm. XXIV, 30; Chodine, reviewed in Annales d' Oculistique, Amer. Ed. 1895, p. 287.

[5] See Hirschberg, Centralbl. 1890 p. 266, where a number of cases are collected: Schutter, Centralbl, 1891, p. 40; Charnley and Fox, Ophthalm. Hospital Reports, x. 2. p. 193, reviewed in Nagel's Jahrb. f. 1881, p. 424. Jacobi, Zehender's Monatsbl. 1874, p. 255; reviewed in Nagel's Jahrb. 1874, 387.

[6] Deutschmann's Beitraege, Bd, I, p. 395.

[7] Deutschmann's Beitraege, Bd. II, p. 389.

[8] Annals of Ophthal. and Otology, Jan. 1893.

[9] These cases have never been collected. A brief resumé is therefore not out of place:

v. Kries, (Graefe's Archiv, XXIV, reviewed in Nagel's Jahrb. f. 1878, p. 231) observed two cases as sequelæ of intermittent fever; in one there was a profuse vitreous hemorrhage in one eye; in the other case, there were profuse retinal hemorrhages in both eyes.

Peunow, Centralbl. 1878, p. 88.) (reviewed in Nagel's Jahresb. f. 1878, p. 230.) found retinal and conjunctival hemorrhages in a number of patients suffering with intermittent fever.

Karpinsky observed retinal hemorrhages in a patient who had had intermittent fever for two or three weeks. (See Nagel's Jahresb. f. 1879, p. 226).

Peunow observed retinal hemorrhages in a case of malarial cachexia, (Nagel's Jahrb. 1883, p. 301).

Landsberg, (see Nagel's Jahresb. 1894, p. 326) reported two cases of retinal hemorrhages due to intermittent fever and occurring during or just after an attack.

Jones saw twelve cases of intra-ocular hemorrhages in malaria. (N. Y. Med. Record, June 27, 1885, p. 705.)

Bull reported seventeen cases of intra-ocular hemorrhage which he ascribed to malaria. All of these patients were over 50 years of age. Equatorial choroiditis was seen after the blood was absorbed. (N. Y. Med. Record, Dec. 1886.)

Mackenzie saw four cases of retinal hemorrhages due to very severe forms of intermittent fever. (Lancet, 1887, vol, II, p. 497.)

Brunt reported six undoubted cases. In all of them there was a high degree of malarial cachexia. (N. Y. Medical Record, 1888, p. 36.)

Minor mentions the occurrence of retinal and vitreous hemorrhages as a result of malaria. (Amer. Journal of Ophthalm. 1891, p. 243.)

[10] Jacobi described "varicose tortuosity" of some retinal veins in three cases, in one associated with the development of blood vessels in the vitreous. But this appears to have been quite a different condition from that described in my cases. (Klin. Monatsbl., 1874, p. 255, reviewed in Nagel's Jahrb. f. 1874, p. 387.)

NEW INSTRUMENTS.

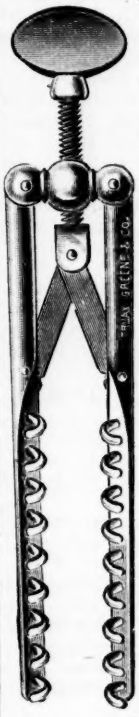
A MODIFICATION OF MY MASTOID RETRACTOR.

BY FRANK ALLPORT, M.D.

PROFESSOR OF CLINICAL OPHTHALMOLOGY AND OTOLOGY IN THE MINNESOTA STATE UNIVERSITY; PRESIDENT MINNESOTA STATE MEDICAL SOCIETY, ETC.

MINNEAPOLIS, MINN.

Some years ago I devised an instrument for facilitating mastoid operations. It has passed into extensive use, but its utility has been much curtailed by the fact that many instrument manufacturers persistently perpetuate two faults in its construction. They make it too delicate for permanent strength, and what is still more annoying, make a round or square screw-handle. The screw-handle should be flat, for when it is either round or square, the fingers will surely slip in screwing it up after the teeth have become engaged in the wound. This defeats one of the prime objects of the instrument, which is intended to be tightly screwed up, thus expanding the blades as widely as possible, for the double purpose of affording ample ground for operation, and of controlling the hemorrhage of the soft parts by producing extreme tension. These objects can only be obtained with a strong instrument, and a good-sized flat handle. I earnestly desire all instrument makers to notice these instructions in order to enable the instrument to accomplish its full amount of good.



At this point I also desire to correct an unintentional error occurring in the last catalogue of Chas. Truax, Greene & Co., of Chicago, who present a cut of my retractor among their mastoid instruments, under the name of Barth's Retractor. Dr. Barth, of Marburg, Germany, has, it is true, devised a mastoid retractor, but it differs entirely from the one devised by myself. My mastoid retractor was made when nearly everybody used the drill for mastoid operations, and only a small field of operation was desired. At present the drift of sentiment favors the chisel for such work, and for this purpose a larger and stronger instrument is desirable. I have, accordingly, enlarged and strengthened my retractor, as will be seen by the accompanying cut. My old instrument has incurved arms, thus enabling the teeth to lock and be inserted in a small opening. The new retractor is intended for larger work, and an incurvation of its arms would lessen its strength, consequently I have had them made straight. After the incision has been made, the lips of the wound can be shoved back, and the teeth, which are somewhat separated at the middle of the instrument, easily inserted and the blades expanded. It is scarcely necessary to say, that this expansion should be as wide as possible, for the purpose of affording a large field for observation and controlling the hemorrhage of the soft parts.

This retractor has also been devised for the purpose of facilitating openings into the cranial cavity at other portions of the skull, for abscesses, tumors, etc.

I would remark incidentally, that the principle involved in this instrument can be made useful in operations upon any part of the body where it is desired to hold apart the lips of an incision. Different sizes and shapes would, of course, become a necessity, but the principle involved is correct, and would much facilitate many operations.

This instrument has been admirably constructed under my personal supervision, by Chas. Truax, Greene & Co., 75 Wabash Avenue, Chicago, Ill., where it can be obtained, and I would respectfully request all other instrument makers desiring to manufacture the retractor, to strictly adhere to the model I have endeavored to describe.

SOCIETY PROCEEDINGS.

Chicago Pathological Society.

Regular Meeting, Sept. 9, 1895.

WELLER VAN HOOK, M.D., President, in the chair.

DR. E. FRIEND read a paper entitled

SYMMETRICAL GANGRENE OR RAYNAUD'S DISEASE.

It is not with the idea of elucidating the etiology and pathology of this rare and interesting affection of the skin, that I report the following case, which I had the good fortune of seeing, but merely to show the keen observing powers of that most excellent clinician whose name this disease bears, and also to freshen the memory of those whose labors in other fields preclude the review of the literature of this subject.

Page 29 of Raynaud's original thesis, translated by Thos.

Barlow, M.D., states: "If, as I have attempted to prove, the fundamental fact of gangrene consists in the diminution or absence of oxygen necessary to the integrity of the life of a tissue, the pathogenic conditions of gangrene considered from a philosophic point of view will bring us back to the following cases:

"1. Absence of blood dependent on all causes which may attack the normal functions of the arteries (obliteration of them in only a particular case). This condition can be compared to nothing better than syncope, in which the action of the heart is momentarily suspended. I propose to call it 'local syncope.'

"2. Presence of avenous blood; that is to say, of a blood insufficiently oxygenated. Continuing to use a term of comparison in the same order of ideas, I will designate this condition, local asphyxia.

3. "It is possible that in consequence of an intoxication inexplicable as to its nature, the living cell, although having at its disposal the elements destined for its nutrition, may be struck with powerlessness to profit by them and gangrene results."

In classifying his cases, he divides them into six groups:

1. Local syncope of the most simple form.
2. Local asphyxia and superficial gangrene with predominance of the nervous element.
3. Symmetrical gangrene of the extremities of benign form.
4. Symmetrical gangrene of the extremities of grave form.
5. Cases of symmetrical gangrene with lesions of the circulatory apparatus, established by autopsy.
6. Doubtful cases, those cases which present less and less certainty, nevertheless they are interesting as a group, because they are in a marked degree removed from what occurs in the common cases, and because they may perhaps one day contribute to clear up many obscure points. It is not impossible that we may have here a very advanced form of the malady which occupies our attention.

Under the latter, he cites a very interesting case reported by Bernard Schrader as follows: "In 1829 while traveling with my brother, Jean Schrader, and Alexander Lak, studying surgery, we found ourselves in a town called Giest, and having entered a hostelry, the master, who was called Jean Brandes, made us see his daughter, aged 23 years who was attacked with the following malady: each month she suffered from severe pains in the extremities of the fingers, and of the toes, accompanied by edematous swelling of the face, feet and hands. This was followed by sphacelus or mortification of the extremities of those parts in which the pain was first felt, which became pale, dry, insensitive, nevertheless with no bad smell, and with no humor proceeding from them.

"These gangrenous parts separated each month in small morsels, which preserved their normal form. While informing me more particularly of the circumstances of this illness, the father of the girl showed me a box in which there were more than a hundred of these morsels of dead flesh which, in the space of three years, had been thrown off and detached from the extremities of different parts of the body of this girl."

As the name implies, the gangrene affects usually symmetrical parts of the body, more frequently the toes of both feet or the fingers of both hands and the two halves of the nose. Still there have been cases reported of late, which are undoubtedly of the same etiologic relation, involving asymmetrical parts. In the Nov. 16, 1893, number of the *Wiener Klinische Wochenschrift*, Docent Riehl reports a case of symmetrical gangrene in a hysterical patient, which could be classified under Raynaud's second division of cases.

A similar case is reported in the *Wiener Klinische Wochenschrift* of May 3, 1894, by Ehrl. Characterizing both these cases, were well-marked hysterical symptoms, such as localized anesthesia, diminution of the field of vision, achromatopsia, and ovarian tenderness.

I am indebted to Dr. Anson Brackett, of Nashua, Iowa, for the following history, having seen the patient in consultation with him in the summer of 1891:

Miss A. E. C., American, age 37, occupation that of a seamstress. Hair brown, eyes gray, height five feet eight inches, weight about 140 pounds. Complexion a little sallow. Lips pale, conjunctiva pale, blood vessels of the face ectatic, in spots, giving the skin a blotchy appearance; digestion good; bowels regular, appetite capricious. Patient had a severe attack of gastritis when she was 20 years of age, and has never menstruated since. Vaginal examination not permitted, but no tenderness or abnormal condition appreciable by external examination. Urine normal, sp. gr. 1020, acid in reaction. Lungs and heart normal, as well as the abdominal viscera. The patient has never been robust since her sickness seventeen years ago, her health has been fair; has had to work very hard indoors in poorly ventilated quarters and was defrauded of her small savings a few years ago, which still further depressed her, and necessitated a renewal of incessant labor. She often sewed late into the night. In May, 1890, she began to feel badly. No definite symptoms were manifest, but she complained of general malaise over a period of some weeks. This was followed by feeling cold, yet with no distinct chills. The next manifestation was severe and protracted pain, localized in different spots, on both lower extremities. The pain was accompanied by a burning sensation in these spots, followed by intense redness, which gradually assumed a purplish hue, ultimately turning black, and surrounding each was a well marked line of demarkation. These spots, varying in size from that of a split pea to three inches in diameter, limited to both thighs, below the middle third, and exquisitely sensitive to touch. After the line of demarkation had formed, separation took place very slowly, leaving a dirty gray base, which healed gradually, it being weeks before cicatrization took place. There was no elevation of temperature except locally. The pulse was rapid, lacking in tonus, becoming quite thready at times. The general condition was that of great exhaustion and loss of vitality.

The treatment was purely symptomatic; as a tonic, strychnia and iron was given in full doses; rest, nutrition, general attention to hygiene of surroundings. Locally, flaxseed meal poultices and iodoform. After a few months she was able to get out of doors some, but walked with difficulty and was easily prostrated. During the summer of 1893 she had a recurrence of the condition, not so severe, however, the gangrenous spots seeming more superficial; in some of them a partial line of what might be called demarkation formed, followed by bullæ of considerable size which were filled with a serous fluid and which soon dried up. These did not in the least resemble those of pemphigus. She had exacerbations and remissions of these lesions from time to time since, spending most of her time in bed in a weak and debilitated condition until about six weeks ago, when death relieved her.

Post-mortem examination not allowed. No tests were made for hematuria or hemoglobinuria, nor were the gangrenous masses examined for chemic agents. The urine contained no sugar, nor could any history of ergot or other medicinal poisoning be obtained, of local processes. The following could be entirely excluded, such as anthrax, furunculosis, phlegmon, as also gangrene from embolus of the vessels supplying the parts, as well as herpes zoster gangrenosum.

Affleck reports two cases of Raynaud's disease, the second of which was such a typical one that it will be well to briefly describe it:

A kitchen maid, aged 16, entered the hospital, stating that during six months preceding she had been subjected to severe pains in her hands and feet, very severe for eight days before entrance. The pains soon subsided in her feet, but became worse in her right hand, the tips of the fingers of which were blanched and corpse-like. There was great pain and at the same time anesthesia of the hand. The left hand presented the same appearance only in a milder form. The toes again became painful, but appeared perfectly normal. Physical examination of the patient revealed no pathologic or abnormal condition, except that no brachial, radial, nor ulnar pulse could be felt in the right arm. The right subclavian and axillary arteries were smaller than the left, and the circumference of the right arm and hand was about one-half an inch smaller than that of the left.

The arm was treated by means of warm opium fermentations, after which, whenever these removed, the hand first appeared blanched but very soon became purple and so painful that the fermentations had to be reapplied. Three days after entrance to the hospital there appeared in the tip of the middle and ring fingers, a dark spot which eventually sloughed off. The patient improved and left the hospital, but no pulsation could at any time be felt in the right arm.

In the other case, there was no clear history of the stage of ischemia of the skin, both feet being attacked instead of one hand, and the gangrene was much more extensive, following a Symmes amputation of the left foot, an examination of the nerves revealed a neuritis, and to this might be added numerous other cases, especially those of Pitres and Vaillard, in which the same pathologic changes in the nerves had taken place.

The following are the most common themes regarding the etiology and pathology of the disease:

1. Endarteritis obliterans.
2. Peripheral neuritis.
3. That championed by Raynaud, namely, a vascular spasm.

Cases included under these various theories have been cited from time to time, some claiming that the peripheral neuritis is only secondary to the vascular disturbances, and others that the neuritis is primary and responsible for the gangrene. This latter view is held by Pitres and Vaillard.

In support of his theory of spasm of the smaller arteries, as the causative factor in local asphyxia of the extremities, Raynaud reported a case of remarkable coincidence between the peripheral circulatory disturbances and identical phenomena observed with the ophthalmoscope in the retinal circulation which phenomena became manifest clinically by an intermittent obscuration of vision. Regarding the treatment, Barlow states that in a great many cases of symmetrical gangrene, amputation is necessary, as in other forms of gangrene, but in those cases where the gangrene is superficial he strongly advises the use of the constant current. The extremity of the limb which is the subject of gangrene is immersed in a large basin, containing salt and water; one pole of the battery is placed on the upper portion of the limb, and the other in the basin, thus converting the salt water into an electrode, opening and closing the current repeatedly to get moderate contractions. In connection with this method, gentle massage ought also to be tried after the acute pain has subsided.

EXHIBITION OF SPECIMENS OF PYOSALPINX,

by DR. WELLER VAN HOOK. I have brought with me this evening a specimen from a case upon which I operated last Friday. It consists of tubes and ovaries which were removed for salpingitis or, as Martin calls this condition sactosalpinx purulenta. If there is any interesting point about the specimen it is this, that we have here an acute inflammation engrafted upon a chronic inflammation, the tubes and ovaries having been removed during the acute attack. The patient was a married woman, 28 years of age, with one child 6 years of age. Her husband confessed to having had gonorrhea some twelve years ago, but assured me that the disease was entirely cured, and the patient does not give a history that she had an acute attack of gonorrhea at any time. It was only after the child was born that she had a pelvic inflammation. She has since had repeated attacks of salpingitis, after which she partially recovered, but had the usual pain and suffering that such women endure. She menstruated eight or ten days ago, but on the third day of menstruation the menses suddenly stopped, and she began to have intense pain in the abdomen, with elevation of temperature and other signs of acute salpingitis. Two or three days later the tubes were removed. Upon examining them it will be seen that they are intensely congested, but that the main portion of their surface is of a yellowish tint. In strictly acute salpingitis, either puerperal or gonorrheal, the color of the tubes is a vivid red.

There are the usual evidences of the tubes having been removed forcibly and the adhesions torn off. The fluid in the larger tube is of a straw color, somewhat inclined to be viscid, and is loaded with staphylococci.

Martin's new book on the diseases of the tubes, which has just appeared, is a most interesting work, and, I am sure, will be read with eagerness by every one interested in this work. He presents beautiful chromo-lithographs of such conditions as are shown by these tubes.

American Public Health Association.

Proceedings of the Twenty-Third Annual Meeting held in Denver, Colo., Oct. 1-4, 1895.

FOURTH DAY—FRIDAY, OCTOBER 4.

(*Concluded from p. 676.*)

The concluding session of the meeting of the Association was called to order shortly after 9 o'clock by PRESIDENT BAILEY.

After various announcements on behalf of the Local Committee of Arrangements had been made by CHAIRMAN SEWALL, the Executive Committee submitted the following recommendations: that the Standing Special Committee "On Restriction and Prevention of Tuberculosis," be discontinued. Adopted.

Three applications for membership were then elected members of the Association in the usual manner. This was followed by the report of the Advisory Council which was read by Secretary Grey, and consisted in naming the officers and three members of the Executive Committee for the ensuing year, all of whom were unanimously elected as follows:

President, Dr. Eduardo Liceaga, of the City of Mexico, Mexico.

First Vice-President, Col. A. A. Woodhull, U. S. A., Denver, Colo.

Second Vice-President, Henry Sewall, Denver, Colo.

Secretary, Irving A. Watson, Concord, N. H.

Treasurer, Henry D. Holton, Brattleboro, Vt.

Buffalo, N. Y., was named as the place for the next annual meeting.

The new members of the Executive Committee are:

J. C. Shrader, Iowa City, Iowa.
R. S. Goodwin, Thomaston, Conn.
James F. McShane, Baltimore, Md.

Regarding the time the next annual meeting should be held, as suggested in the President's address, it was moved and duly seconded that the option be placed in the hands of the incoming President, Vice-Presidents and Secretary, and if they thought it best that the meeting be held in September, 1896, to arrange for it to be held during that month instead of October.

PRESIDENT BAILEY announced these committees, a number of names being substituted during the reading as occasion required:

ADVISORY COUNCIL.

Alabama—Jerome Cochran, Mobile.
Arkansas—H. C. Dunnavant, Osceola.
Connecticut—R. S. Goodwin, Thomaston.
California—J. R. Laine, San Francisco.
Colorado—W. P. Munn, Denver.
Delaware—Mr. W. C. R. Colquhoun, Wilmington.
Florida—Joseph Y. Porter, Key West.
Georgia—William F. Brunner, Savannah.
Illinois—Liston H. Montgomery, Chicago.
Indiana—Lindsay S. Whitesides, Franklin.
Iowa—A. W. Cantwell, Davenport.
Kansas—Dr. Gifford, Topeka.
Kentucky—J. N. McCormack, Bowling Green.
Louisiana—Felix Formento, New Orleans.
Maine—A. G. Young, Augusta.
Maryland—James F. McShane, Baltimore.
Massachusetts—Samuel H. Durgin, Boston.
Michigan—Cressy L. Wilbur, Lansing.
Minnesota—H. M. Bracken, Minneapolis.
Mississippi—Wirt Johnson, Jackson.
Missouri—J. D. Griffith, Kansas City.
Nebraska—F. D. Haldeman, Ord.
New Hampshire—Granville P. Conn, Concord.
New Jersey—Henry Mitchell, Asbury Park.
New Mexico—J. Cole, Cerrillos.
New York—A. Walter Suiter, Herkimer.
North Carolina—F. E. Lewis, Raleigh.
North Dakota—John Montgomery, Ardoch.
Ohio—Charles O. Probst, Columbus.
Oklahoma—Charles F. Waldron, Oklahoma City.
Pennsylvania—Mr. Crosby Grey, Pittsburg.
Rhode Island—Gardner T. Swartz, Providence.
South Carolina—H. B. Horlbeck, Charleston.
South Carolina—K. M. O. Teigen, Fargo.
Tennessee—J. Berrien Lindsley, Nashville.
Texas—R. M. Swearingen, Austin.
Vermont—Henry D. Holton, Brattleboro.
Virginia—(Unable to make the appointment as Professor Minor is dead.)
Washington—G. S. Armstrong, Olympia.
West Virginia—Louis D. Wilson, Wheeling.
Wisconsin—U. O. B. Wingate, Milwaukee.
District of Columbia—Ralph Walsh, Washington.
United States Army—F. Terrell, Washington.
United States Navy—Newton L. Bates, Washington.
U. S. M.-H. S.—P. H. Bailhache, Staten Island, N. Y.
Dominion of Canada—Frederick Montizambert, Quebec.
Province of Ontario—Peter H. Bryce, Ontario.
Province of Quebec—E. P. Lachapelle, Montreal.
Manitoba—James Patterson, Winnipeg.
New Brunswick—George E. Coulthard, Fredericton.
Nova Scotia—A. P. Reid, Halifax.

The appointment of members of the Council for the States of Mexico was referred to the new President, Dr. Liceaga.

PUBLICATION COMMITTEE.

Irving A. Watson, Concord, N. H.
Granville P. Conn, Concord, N. H.
Samuel W. Abbott, Wakefield, Mass.

COMMITTEE ON THE POLLUTION OF WATER SUPPLIES.

Maj. Charles Smart, U. S. A., Washington, D. C., (with authority to select associates).

COMMITTEE ON THE DISPOSAL OF GARBAGE AND REFUSE.

Rudolph Hering, C. E., New York City.
Delos Fall, Albion, Mich.
Louis Laberge, Montreal, P. O.
Henry F. Hoyt, St. Paul, Minn.
Roberto Gayol, C. E., Mexico, Mex.

COMMITTEE ON ANIMAL DISEASES AND ANIMAL FOOD.

D. E. Salmon, D. V. M., Washington, D. C.
Prof. James Law, Ithaca, N. Y.
Prof. José L. Gomez, Mexico, Mex.

COMMITTEE ON NOMENCLATURE OF DISEASES AND FORMS OF STATISTICS.

Samuel W. Abbott, Wakefield, Mass.
Jesus E. Monjaras, San Luis Potosi, Mex.
Elzear Pelletier, Montreal, P. Q.
Cressy L. Wilbur, Lansing, Mich.
Charles N. Hewitt, Minneapolis, Minn.

COMMITTEE ON PROTECTIVE INOCULATIONS IN INFECTIOUS DISEASES.

Prof. Victor C. Vaughan, Ann Arbor, Mich.
Surgeon-General George M. Sternberg, U. S. A., Washington, D. C.
George H. F. Nuttall, Baltimore, Md.
M. Carmona y. Valle, Mexico, Mex.
J. E. Laberge, Montreal, P. Q.

COMMITTEE ON NATIONAL HEALTH LEGISLATION.

Henry P. Walcott, Cambridge, Mass.
J. N. McCormack, Bowling Green, Ky.
Irving A. Watson, Concord, N. H.
James D. Plunkett, Nashville, Tenn.
Henry B. Baker, Lansing, Mich.
Samuel R. Oliphant, New Orleans, La.
Richard M. Swearingin, Austin, Tex.
Henry B. Horlbeck, Charleston, S. C.
Benjamin Lee, Philadelphia, Pa.
Samuel H. Durgin, Boston, Mass.
U. O. B. Wingate, Milwaukee, Wis.
Stephen Smith, New York, N. Y.
C. O. Probst, Columbus, Ohio.

COMMITTEE ON THE CAUSE AND PREVENTION OF DIPHTHERIA.

J. J. Kinyoun, Washington, D. C.
Peter H. Bryce, Toronto, Ont.
Juan Ramirez De Arellano, Mexico, Mex.
Wyatt Johnson, Montreal, P. Q.
A. Walter Suiter, Herkimer, N. Y.

COMMITTEE ON CAUSES AND PREVENTION OF INFANT MORTALITY

Charles N. Hewitt, Minneapolis, Minn., (with authority to select associates).

COMMITTEE ON CAR SANITATION.

Granville P. Conn, Concord, N. H.
E. C. Jordan, C. E., Portland, Me.
Domingo Orvanos, Mexico, Mex.
S. H. Woodbridge, Boston, Mass.
E. R. Lewis, Kansas City, Mo.

INTERNATIONAL COMMITTEE ON THE PREVENTION OF THE SPREAD OF YELLOW FEVER.

Felix Formento, New Orleans, La.
Surgeon-General George M. Sternberg, U. S. A. Washington, D. C.
Gregorio Mendizabal, Orizaba, Vera Cruz, Mex.
Manuel Carmona y. Valle, Mexico, Mex.
Jerome Cochran, Mobile, Ala.
Samuel R. Oliphant, New Orleans, La.
H. B. Horlbeck, Charleston, S. C.

ON STEAMSHIP AND STEAMBOAT SANITATION.

F. Montizambert, Quebec, Canada.
Samuel H. Durgin, Boston, Mass.
Samuel R. Oliphant, New Orleans, La.
H. B. Horlbeck, Charleston, S. C.
Albert L. Gihon, U. S. N., Washington, D. C.

The Committees "On the Transportation of the Dead" and "On Disposal of the Dead" were merged into one committee, namely

COMMITTEE ON TRANSPORTATION AND DISPOSAL OF THE DEAD.

and consists of

Jefferson D. Griffith, Kansas City, Mo.
Peter H. Bryce, Toronto, Ont.
Charles D. Smith, Portland, Me.
Charles O. Probst, Columbus, Ohio.
Farquhar Ferguson, New York City.
Mr. George W. Fuller, Lawrence, Mass.
Elzear Pelletier, Montreal, P. Q.
Jesus Chico, Guanajuata, Mex.

COMMITTEE ON THE USE OF ALCOHOLIC DRINKS FROM A SANITARY STANDPOINT.

Felix Formento, New Orleans, La.
C. O. Probst, Columbus, Ohio.
E. P. Lachapelle, Montreal, P. Q.

The appointment of the chairman of the Local Committee of Arrangements was referred to the new administration.

MR. CROSBY GREY offered a motion duly seconded that when the Association adjourns, it do so at 11:45 o'clock. The motion prevailed.

The following resolution offered by DR. J. N. MCCORMACK was unanimously adopted:

Resolved, That the members of the American Public Health Association desire and hereby tender most cordial thanks to all concerned in inviting and bringing the twenty-third annual meeting of the Association to the beautiful Queen City of the Plains; the Committee of Arrangements, the physicians and citizens, the Chamber of Commerce and especially to the ladies of Denver for the attentions and charming hospitalities which have made the stay here a pleasure; to the various railroad companies for reduced rates; to the Brown Palace Hotel for the use of its hall and to the newspapers for reports of proceedings. We also express thanks to Dr. Cantwell and other citizens of Davenport, Iowa, for courtesies extended at that point, and to the retiring President for the able, courteous and dignified manner in which he has presided over the meeting.

DR. HENRY MITCHELL moved, duly seconded, that a committee of three be appointed by the chair to communicate with the Postmaster-General regarding the transmission of bacteriologic specimens through the mails, in accordance with the resolution adopted on Wednesday forenoon by the Association. The motion prevailed.

At the instance of the Special Committee on National Legislation, of the American Pharmaceutical Association, of which Dr. F. E. Stewart of Detroit, Mich., is chairman, Dr. Liston H. Montgomery submitted letters and a resolution to the new executive committee, looking to the securing of uniform poison laws in all the States, as the laws at present regarding the sale of poison are not in accord. For instance, a poison can be legally sold as such in most States only with the label of warning, and after registration by a competent pharmacist. Put it up in the form of a proprietary medicine, and it is at once beyond the restraint of regulation and then it may be sold by anybody without let or hindrance.

REPORTS OF SPECIAL COMMITTEES.

DR. IRVING A. WATSON reported for Dr. Charles Smart, chairman of the Committee on the Pollution of Water Supplies, that the committee is hard at work and that this be regarded as a report of progress, with the request that the committee be continued, which was so ordered.

DR. P. H. BRYCE reported briefly for himself as the chairman of his Committee on International Pollution of Water Supplies, which was on motion referred to the new executive committee.

MR. RUDOLPH HERING, chairman of the committee on the Disposal of Garbage and Refuse, submitted an elaborate report, yet he stated that it was not complete. The speaker read but a few moments, when upon motion, the report was accepted, referred to the Publication Committee, and the committee continued in accordance with previous appointment.

Reports were due, although none were presented, from the following committees: On National Health Legislation, On the Cause and Prevention of Diphtheria, On Causes and Prevention of Infant Mortality, On the Transportation of the Dead.

Thirteen papers were announced to be read on the morning's program. A few were read with little or no discussion on the propositions evolved. The first paper was presented by DR. EDUARDO LICEAGA of the city of Mexico, entitled,

A CONTRIBUTION TO THE STUDY OF YELLOW FEVER IN CONNECTION WITH ITS MEDICAL GEOGRAPHY AND PROPHYLAXIS IN THE MEXICAN REPUBLIC.

The speaker contended that the means of combating the disease must be sought in the inoculation of blood serum from persons already attacked, or rather who have suffered

from yellow fever, or by inoculation of blood serum from animals that have acquired immunity. Yellow fever does not exist in an endemic condition except in the port of Vera Cruz, and in the northern districts of the peninsula of Yucatan. There is not nor has there been a single endemic source of this disease on the Pacific Coast of the Mexican Republic. The only epidemic during the present year was that which occurred at Vera Cruz with a mortality of 120, between January and August.

The second topic was a paper on

PROPHYLAXIS OF YELLOW FEVER,

by Dr. Manuel Carmona y. Valle, also of the city of Mexico, which was read in English by Dr. Formento, while his colleagues and the author attentively listened. The writer said in part: By the inoculation of a yellow fever sufferer with his urine the disease is stemmed and finally eradicated from the system. In 1882 he began treating victims of the scourge with subcutaneous injections of urine and success followed. He discovered that he could vaccinate a sound person with the fluid from a patient who was over four days diseased, and that those undergoing the operation were immuned from any further danger of contagion. The injection is made in the cellular tissues of the back part of the arm and from 1,358 inoculations made by him, there has never followed any other consequence than the formation of a single abscess in the place of injection. This method has been used by Dr. Garcia del Formel in Panama with great success. The essayist, while first experimenting, treated 208 persons in 1882–83. Only one out of this number, a relative employed in the custom house in his city became slightly ill, not sufficient for him to go to bed with the malady. . . . . Continuing he said that Surgeon-General Sternberg of the U. S. Army, who had been in correspondence with him, proposed that the residuum of urine be obtained by the evaporation of the liquid in a vacuum. . . . . M. Bouchard of Paris, had been for some time investigating the author's method of treatment, with successful results in the case of inoculated animals. The Doctor recommended to his colleagues in the United States that they use the residuum, retained in small flasks which should be perfectly aseptic and hermetically sealed, when treating a case of yellow fever. His own method before making an inoculation is to dissolve 5 centigrams of residuum in 1 gram of pure water, then inject with a Pravaz syringe.

In the brief discussion that ensued, Dr. Woodhull expressed his thanks to both writers and the authors of the foregoing papers for their contributions on yellow fever, and particularly for the last one. The reading of that paper was to him exceedingly interesting as he thought it was to all the gentlemen present.

Dr. Formento—said that there is a great future in the study of the prophylaxis of this disease. Since 1880, yellow fever has been kept out of New Orleans as all cases are quarantined at the quarantine station in the river below the city. He had no doubt that the substance found in the urine of patients suffering from yellow fever will produce immunity from the disease to others if they permit themselves to be inoculated in the manner described by Dr. Carmona y. Valle.

A paper was delivered in Spanish by Dr. Jesus E. Monjaras of San Luis Potosi, Mex., "On the Necessity for the Establishment of Sanatoria to Prevent Chlorosis as the best Prophylactic against Consumption in Particular, and Constitutional Diseases in General," upon which there was no discussion. He was followed by Dr. Gregorio Mendizabal of Orizaba, Vera Cruz, Mex., who read a paper

ON BATHS; THEIR NECESSITY, THEIR INFLUENCE IN ECONOMY; THE DANGERS THEY PRESENT, AND THE METHODS OF PREVENTING THEM,

of which these excerpts were taken: cleanliness is without dispute, the fountain of beauty, as it is also the most pure spring of human health. The writer referred to the fact that cleanliness is a preventive of disease . . . . . The importance given to bathing by the Egyptians, Persians, Greeks, and above all the Romans was considered . . . The first act of Eastern hospitality during the remote ages, consisted in offering a bath to the traveler seeking the shelter of a roof. . . . . The gigantic Roman ruins, and the degree of prominence given to ablution in that exalted nation whose legions triumphantly traversed the greater part of the then known world was dwelt upon . . . Unfortunately civilization, the corruption of morals, as John Jacob Rousseau says, converted in an evil day those fountains open to all; as well to the high born as the plebeian; the rich as the poor; the wise as the ignorant, and from which those people obtained such benefits to health and virility—into amphitheaters of corruption and iniquity, into centers of depravity and effeminacy, making them abominable in the eyes of men of pure heart and habits who succeeded the villified race of that abject Roman Empire . . . . . These institutions having gone out of use, it was necessary to go slowly again over the same ground and provide the social classes with the most easy and economical means of cleansing their bodies and clothing, as well as to preserve them from the thousands of ailments emenating from negligence and ignorance. . . . . .

This is one of the many, and perhaps most interesting propositions of contemporary hygiene, and the boards of health have not been idle, and their gospel has begun to bear fruit. We note with satisfaction the rivalry between modern cities in procuring for each inhabitant the greatest possible number of gallons of water, and supplying it so cheaply as to place the means of cleansing within the reach of even the most destitute of our race . . . . . The advantages of hygiene were further proclaimed to show that the indifferent and indolent poor would be benefited by a strict observance of it . . . . . The physiologic and therapeutic properties of cold water were noted; how it raises the standard of health, invigorates the most debilitated constitutions, and assuages nervous excitement, etc. . . . . The shower bath is a good tonic because it gives rise to a healthy perspiration. It does not irritate and one is less exposed to a cold than in a tub because the duration is very short; the body is more thoroughly cleansed as all impurities are removed from the skin by the continually new and pure falling water. It satisfies also the demands of economy without any extra expenditure of water . . . . . .

Public baths have reached the highest state of perfection in Germany, Austria and England, and these countries have produced in the last fifteen years the largest number of scientific works on the subject. . . . . .

The city of Berlin shows with pride to travelers her bathing department in the barracks of the Grenadier Guards wherein 300 soldiers can bathe themselves hourly, each consuming only from 10 to 15 liters of water. . . . . .

The City of Mexico which had hitherto only a supply of from 65 to 70 liters of water per inhabitant, will double this allowance within a short time and will augment the number of modern bathing centers where prices will be arranged within the reach of all. . . . . .

The government is now constructing a bathhouse in Lagunillas Square, applying to the object a private donation, in which the poor will find hot and cold shower baths, with the further privilege of having their soiled linen washed while they are on the premises. . . . . .

The speaker then dwelt upon the manner in which diseases may be contracted in badly kept and imperfectly cleansed tubs, through the use of sheets, towels, combs, brushes, etc.; he recited the various kinds of disease that had come under his observation contracted in this manner, and concluded by saying, the necessity of having public baths kept absolutey clean is imperative, otherwise they act as disease disseminators.

An abstract of a paper on

SMALLPOX IN WISCONSIN FROM JANUARY, 1894, TO JUNE, 1895,

was presented by Dr. U. O. B. Wingate, of Milwaukee, Wis.

The State of Wisconsin has an average length of about 260 miles, breadth 215 miles, and an area of 56,000 square miles, or 35,840,000 square acres. In other words, its territory is nearly equal to that of England and Wales together. . . . The highest elevations are about eighteen hundred feet above the level of the sea, and the lowest six hundred feet. It is divided into seventy counties, and has a population, according to the census of 1895, of nearly 2,000,000. It has one city of about 250,000 population, and a total of 1,235 cities, villages and towns, out of which number there are 48 cities with a population ranging from 25,000 to 40,000 respectively. Each city, village and township is required by law to have an organized local board of health, consisting of a chairman, a secretary and a health officer, who is the executive officer of the board. There are a few townships in the sparsely populated districts that have not conformed to the requirements of the law. There are, however, about 475 legally organized local boards of health in the State. . . . . .

Prior to 1894, smallpox had not existed in the State for a number of years with the exception of now and then a sporadic case. At the beginning of 1894 the disease showed an alarming increase in the city of Chicago, Ill. During January of that year three cases occurred in the interior of this State and one in the city of Milwaukee. The disease did not

seem to spread from these cases, but soon after it began to appear in different places throughout the State. In some instances it could be traced directly to Chicago. The State Board of Health adopted its vaccination rule which required that no child could be admitted to school without presenting a certificate of successful vaccination. This rule was of general application throughout the State. It also urged vaccination of all teachers, inmates and employes of all institutions, factories, etc. There was, however, a very active anti-vaccination society at work in the city of Milwaukee, and its influence spread more or less over certain portions of the State, but subsequent reports showed that the rule was very generally observed, and especially in those localities where the disease made its appearance. . . .

The disease increased and reached its height in the State about the middle of October, 1894, when it began to decline and entirely disappeared in the month of June, 1895. It appeared in thirty-one out of the seventy counties, and in fifty-eight places. . . . . A table showing the number of cases in each county, and number of deaths was then given. . . . . Out of the total number of 1,412 cases throughout the State, with 352 deaths, 1,197 cases occurred in the county and city of Milwaukee, with 299 deaths. . . .

The total death rate in the State was 24.92 per cent., while in the city of Milwaukee there were 1,060 cases with 271 deaths or 25.56 per cent. Out of this number 575 cases were treated in the hospital with 134 deaths, giving a death rate of 22.53 per cent. . . . . Four hundred and eighty-five cases were treated in houses, with 137 deaths, giving a death rate of 28.25 per cent. . . . . Out of the 1,060 cases, a history of vaccination was obtained in 1,016, 343 of which gave a history or presented evidence of vaccination some time prior to the attack. Of this number, 35 died, or 10.21 per cent. . . . . Six hundred and seventy-three cases gave a history of having never been vaccinated. Of this number 191 died, or 28.38 per cent. . . . . .

In several instances the disease was promptly stamped out. If a second focus of infection was introduced some weeks or months subsequently, again it would be promptly stamped out. . . . . .

In the majority of instances, public sentiment sustained the State laws, which are ample and sufficient, if properly enforced, to control an outbreak of contagious disease of any kind in Wisconsin. Although great difficulty was at first encountered in the city of Milwaukee, for a time, to overcome the prejudice of a certain class who did not appreciate the value of sanitary law and its enforcement, riotous demonstrations occurred which are already a matter of history.

Vaccination to be effective must be repeated sufficiently often to keep the system immuned from the disease, and until that time comes there will be smallpox. Until every person will take it upon himself to be re-vaccinated every four years, on the same principle that he would have a fire or life insurance policy renewed when it runs out, we can never expect to be absolutely protected from smallpox. Some persons vaccinated in infancy may remain immune for a lifetime, while with others immunity will last only a a few years. The only safety is in oft-repeated vaccinations, certainly as often as every five years. . . . . Pure lymph should be propagated absolutely under the control of the State or National government, and should be taken out of the hands of commercial interests. . . . . Until this is done it is no wonder that the people, or quite a proportion of them, oppose vaccination on the ground of impure and unreliable vaccine. . . . . The writer believes this is true also of the antitoxins and similar products used for immunizing purposes. . . . . Successful vaccination with pure effective vaccine, and isolation of cases, are the two great weapons upon which we must rely to control outbreaks of smallpox, and to carry these two means into effect we must have both law and education. . . . . .

The death rate, as shown by all statistics with which the author is acquainted, show that cases treated in properly constructed and properly managed isolation hospitals is decidedly less than of those cases treated in homes. . . . . In the great majority of instances, in cities especially, cases of smallpox can not be properly isolated at home without danger to the public. . . . . People should be taught the advantages, not only to themselves but to their neighbors, of being removed to isolation hospitals for treatment. . . . . Another great work to be done, is to educate communities up to the importance of appropriating a sufficient amount of money to erect and maintain in every city suitable hospitals which should be in every way so well equipped that no complaint can be brought against them, and which should be maintained at public expense, that the comforts enjoyed therein by patients ill with contagious diseases are equal to or greater than those enjoyed in the majority of homes. . . . . By such provisions, epidemics of smallpox can be easily controlled, and not only life and health saved, but the enormous expense to every community which necessarily occurs in which any extended outbreak of this disease exists.

PRESIDENT-ELECT LICEAGA was then escorted to the chair by Drs. Formento and Horlbeck and formally inducted into office.

Senors:—I consider the honor bestowed upon me as an honor to my country, and I thank the Association. I consider that among my own countrymen present, there are men more worthy of the honor, and on that account I feel a personal debt of gratitude to the Association. I can assure the Association that my deficiencies will be compensated by devoting all my intelligence, good will and energy to become worthy of the great honor conferred upon me.

PRESIDENT BAILEY the retiring executive officer, thanked the Association for courtesies shown him, and assured his friends that the occasion would be one of the delights of his lifetime. He then adjourned the Association at 11:35 o'clock to reconvene at the Antlers Hotel, Colorado Springs on Monday morning at 10 o'clock October 7.

COLORADO SPRINGS, COLO., Monday, October 7.—About one hundred members of the American Public Health Association visited this city last Saturday and remained over until to-day. The citizens and medical profession of Colorado Springs and Manitou entertained the Association in a luncheon at Broadmoor Casino and in a trip to Cheyenne canon and other points of interest in the Pike's Peak region, including a drive through Glen Aerie, the Garden of the Gods, etc.; this program was carried out to the letter. The remaining visiting members passed a resolution of thanks for the numerous courtesies and hospitalities they received during their brief sojourn in this beautiful city, after which the Association adjourned *sine die*.

Some arrangements had been made to start from the Union depot in Denver, on Friday afternoon after adjournment, for a trip around the famous "Georgetown loop" to Silver Plume. This included a "stop over" at Idaho Springs, but the inclement weather then prevailing made the undertaking too hazardous and it was therefore abandoned.

Thursday afternoon the 3d inst, the members with their families and invited guests indulged in a trolley ride about the city and suburbs which included about forty-five miles, starting from the headquarters at 2 o'clock. This was tendered by the Denver Chamber of Commerce. The ride included a visit to the Zoological Gardens at the outskirts of the city. Many members also availed themselves of the invitation extended by Col. and Mrs. A. A. Woodhull, to an afternoon tea where the genial host and hostess entertained the visitors at their hospitable home, 1020 Logan Avenue; on Wednesday the 2d inst., the lady delegates and visitors were invited to an afternoon tea given by Mrs. N. P. Hill at her residence, corner of Fourteenth and Welton Streets. This proved to be a most enjoyable and delightful affair. During the evening, a reception for the members and their friends was given in the parlors of the Brown Palace Hotel. The De Harport orchestra was in attendance, and the care with which the details of the reception were carried out made it a perfect success. It was stated that there were upward of 400 ladies and gentlemen present during the evening. The parlors were beautifully embellished for the occasion. It was while this was in progress shortly after 9 o'clock that the Mexican delegation arrived which altogether included fourteen members. During the day also at various intervals, the program was varied by a visit to the Denver Athletic Club and to the Smelters, in a tally-ho which was furnished by the Local Committee of Arrangements.

Tuesday evening, the 1st inst., after the open public meeting in Trinity M. E. Church, the program was of a semi-social and semi-formal character. His Honor the Mayor, and Mrs. T. S. McMurray, Dr. and Mrs. J. H. Gower, Dr. and Mrs. Henry Sewall, Dr. and Mrs. J. N. Hall introduced the guests to the citizens.

Monday afternoon the 30th, at 1:30 o'clock the members and their friends were invited by the Denver Union Water Co., to inspect the water works of the mountain supply in the Platte canon, twenty-two miles from Denver. Special cars were provided for the occasion, also dainty refreshments. However pleased the Association might have been with the source of Denver's water supply for drinking and domestic purposes it did not formally indorse it.

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MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Henry P. Newman, Venetian Building, Chicago, Ill., sending him a certificate or statement that the applicant is in good standing in his own Society, signed by the President and Secretary of said Society. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership.

On receipt of the subscription the weekly JOURNAL of the Association will be forwarded regularly.

Gentlemen already members of the Association should send their annual subscription to the Treasurer, or direct to the JOURNAL office.

All communications and manuscript of whatever character, intended for publication in the JOURNAL, should be addressed to the *Editor*, and all communications relative to the business of the JOURNAL, proof sheets returned, or in regard to subscriptions, should be addressed to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 86 Fifth Avenue, Chicago.

SATURDAY, OCTOBER 26, 1895.

CONCERNING PORTRAITS.

Animum pictura pascit inani.—VIRGIL.
"And with the shadowy picture feeds his mind."

We have had many letters from members of the ASSOCIATION making inquiry about the probable disposition of the photographs of the members, which this JOURNAL has been receiving from time to time for the last six months.

Some other journals have even been facetious when mentioning the matter. The truth is that few things are of more interest historically than the pictures of the men who make the history, and from the earliest times it has been a common complaint that the world was indifferent to contemporary portraits.

PLINY ("Natural History") lamented that his age possessed no portraits of living men. "Correct portraits of individuals," says PLINY, "were formerly transmitted to future ages by painting, but this has now fallen into desuetude. Brazen shields are now set up, and silver faces with only some obscure traces of the countenance; the very heads, too, of the statues are changed; a thing that has given rise before now to many a current sarcastic line, so true it is that people prefer showing off the valuable material to having a faithful likeness. And yet, at the same time, we tapestry the walls of our galleries with old pictures, and we prize the portraits of strangers; while as to those made in honor of ourselves, we esteem them only for the value of the material, for some heir to break up and melt, and so forestall the noose and slipknot of the thief. Thus it is that we possess the portraits of no living individuals, and leave behind us the pictures of our wealth, not of our persons. And yet the very same persons adorn the palæstra and the anointing-room with portraits of athletes and both hang up in their chamber and carry about them a likeness of EPICURUS."

PLINY referred with pleasure to the practice of his ancestors, so entirely different. Family portraits were arranged each in its separate niche, to be always in readiness to accompany the funeral processions of the family, occasions on which, by this practice, every member of the family that had ever existed was always present.

"Indeed," says PLINY, in concluding his interesting chapter on portraits; "it is my opinion that nothing can be a greater proof of having achieved success in life, than a lasting desire on the part of one's fellow men to know what one's features were. This practice of grouping portraits was first introduced at Rome by ASINIUS POLLIO." It was VARRO who first inserted portraits in books.

"What," says the elder D'ISRAELI[1], "is more agreeable to the curiosity of the mind and eye than the portraits of great characters? An old philosopher whom MARVILLE invited to seea collection of landscapes by a celebrated artist replied, 'Landscapes I prefer seeing in the country itself, but I am fond of contemplating the pictures of illustrious men.' This opinion has some truth; LORD ORFORD preferred an interesting portrait to either landscape or historical painting. 'A landscape,' said he, 'however excellent in its distributions of wood and water and buildings, leaves not one trace in the memory; historical painting is perpetually false in a variety of ways, in the costume, the grouping, the portraits, and is nothing more than fabulous painting, but a real portrait is truth itself and calls up so many collateral ideas as to fill an intelligent mind more than any other species.'"

It is a false pride which refuses to have a picture taken. "Do you not think," said DASSIER, the painter, to MONTESQUIEU, "that there is as much pride in refusing my offer as in accepting it?"

The voice of antiquity, not less than that of modern curiosity, urges us to make these collections of our contemporaries while we can, and before TIME, that subtle painter, shall have changed all the lineaments that made the physiognomy characteristic of our friends in the active period of their labor.

ADDISON, who placed the line from VIRGIL which we quote at the head of this article, at the beginning of his charming vision of a picture gallery, observed "an old man creeping up and down from one picture to another, and retouching all the fine pieces that stood before me. I could not but be attentive to all his motions. I found his pencil was so very light that it worked imperceptibly, and after a thousand touches, scarce produced any visible effect in the pictures on which he was employed. However, as he busied himself incessantly, and repeated touch after touch without rest or intermission, he wore off incessantly every disagreeable gloss that hung upon a figure. He also added such a beautiful brown to the shades and mellowness to the colors, that he made

[1] Curiosities of Literature.

every picture more perfect than when it came fresh from the master's pencil. I could not forbear looking upon the face of this ancient workman, and immediately by the long lock of hair on his forehead discovered him to be TIME." And so, while TIME may produce the "wrinkled front," he blends the wrinkles deftly, until the face most worthy of protracted study is that of the sage, mellow with age and accumulated wisdom.

Let then, our old and young members alike aid in furnishing our portrait gallery with their pictures. They will be deposited in the ASSOCIATION Library, as among the most sacred archives of our noble ASSOCIATION. What would our generation give for an authentic portrait of HIPPOCRATES or GALEN, or of the medical masters of medieval times, and yet our time will some day be quite as remote from distant posterity. Opportunity may indeed prevent this age from producing a counterpart of HIPPOCRATES or GALEN, but measured by the sum total of the reduction of human suffering, the age that produced anesthesia can never be uninteresting or unimportant.

THE COLOR SENSE AND RAILWAY AND SEA SIGNALS

The importance of systematic examination of the color sense in seamen and railway employes is now so thoroughly recognized that it is perhaps commonly thought that all the requirements for the safety of life and property are met by the system now in vogue. The complete weeding out of all who show defects of color vision from these employments is the ideal of the ophthalmologists and of those who have made a specialty of this subject, like DR. JEFFRIES, of Boston, and some others. Against them, however, there is sometimes raised a voice, for example, DRS. DIBBLE and OUTTEN at the last meeting of the Association of Railway Surgeons, and MR. F. FERGUS, in a recent issue of the *Glasgow Medical Journal*. These objectors assert that there are cases that are rejected by the usual tests that are perfectly competent to meet all practical emergencies, and that any rigid tests apart from those directly practical sometimes work injustice. It is asserted also by some, that considering the fact that 4 per cent. of males are more or less defective in their color vision, there ought to be a larger proportion of accidents by land and water directly traceable to these defects during the many years that these defective individuals have been employed.

DR. W. R. GOWERS, in a communication in the *Lancet*, last March, asked for direct evidences of accidents due to this cause; the replies he received were surprisingly few in number, and the instances given were in part those mentioned by JEFFRIES, which are, so to speak, the classic ones in the literature.

Recognizing, however, as one must, the difficulties of establishing all the causes of accidents by rail or sea, it may be admitted on *a priori* grounds that the element of defective color vision is an important one among the possibilities of danger, and that it should be adequately guarded against. The examinations can be made sufficiently practical and, where actual hardship results especial care should be taken and some compensation afforded if justice demands it. There is more danger probably in the defects of those who can pass the examination successfully than in the chance of a case of imperfect color vision passing it, or in the possible laxity of the tests.

The dangers from color blindness are not confined to those who reveal it in sorting worsteds or even to the spectroscopic tests. It is a temporary symptom of many possible pathologic conditions, alcoholism, hysteria, tobacco saturation; it may be a relic of acute disease, convalescence from which seems to be complete, and lastly it may probably be sometimes the direct temporary result of mental stress, so that in certain emergencies where it is most needed it may be wanting. These cases are the more dangerous in that they are unsuspected, and caution and suspicion are done away with by the successful result of the prior examination. To trust human life implicitly and solely to the perfection of so delicate and easily deranged a function, when additional precautions for safety are practicable and readily available, would seem to be almost criminal when all these facts are taken into consideration.

Color blindness in these cases, as well as probably in many congenital ones, as was maintained nearly fifteen years ago by BANNISTER and BURNETT, is probably a psychic rather than a retinal disorder, and this psychic factor is a possibility to be always considered. The danger, therefore, is that we shall depend too much upon a refinement of a sensory function that is defective in an appreciable percentage and may possibly fail under critical circumstances in a much larger proportion.

The advisability of supplementing the color signals by some other and more efficient device has long been recognized by practical navigators, and it is efficiently done upon the inland waters of the United States by the use of range lights on steamers, which has lately been made compulsory also on the lakes. They have the advantage over the colored lights, of greater range of visibility, of being distinguishable at all times, and of affording data by which to ascertain the exact course of the approaching steamer. Whether any analogous arrangement is equally available in railway practice is perhaps a question, but there can be no doubt that a semaphore arrangement of lights for a danger signal would always be a most useful addition to the colored lights now employed.

The subject has important medical as well as practical bearings, and it would be well were it fully discussed in the medical press.

UREMIC PERICARDITIS.

The frequency of pericarditis in chronic nephritis is well known. BUHL (*Mitheilungen a. o. pathol. Institut. München*, 1878) estimated the frequency at 35 per cent. of the observed cases; BAMBERGER, (*Volkmann's Sammlung klin. vortrage*, 1878, No. 173) at 14 per cent. and WAGNER (*Ziemssen's Encyclopedia*, 1882) observed pericarditis fourteen times in 150 cases of chronic nephritis. Many of the earlier writers believed the cause of this inflammation of the pericardium, as well as of other tissues, in the course of chronic nephritis, to be toxic substances circulating in the blood which the kidneys failed to eliminate. Under the influence of the study of bacteriology the opinion gained ground that pericarditis in connection with nephritis must be due to an accidental infection, and this was the view expressed by LECORCHÉ and TALAMON in their treatise of albuminuria and Bright's disease published in 1888.

It is self-evident that in order to determine the exact cause of the pericarditis in a given case, resort must be had to the modern microscopic and bacteriologic examination of fresh material as soon after death as possible. There are already a few records published of the examination of such cases and especially by BANTI of Florence. He described a case of pericarditis in a uremic in 1888 (*Deutsche med. Wochenschrift*, No. 44, 1888) in which the exudate and the tissue of the pericardium seemed absolutely free from bacteria as far as could be determined by microscopic examination, by culture experiments and by inoculation into animals. BAUMGARTEN (*Baumgarten's Jahresbericht*, Bd. IV) was inclined to think that the inflammation in this case was due to microorganisms that had died before the material was examined, but BANTI was not inclined to accept this criticism because the pericarditis had existed only seven days before death. Last year (*Centralblatt für Allg. Path. u. Path. Anat.*, Bd. V, No. 11) BANTI described a new case of pericarditis in uremia due to arterio-sclerotic interstitial nephritis, in which the exudate and the tissue of the pericardium were found free from microbes after the most thorough examination according to the best methods. Aërobic and anaërobic culture experiments were made with large masses of the exudate upon a variety of media, but all remained sterile. In this case the clinical manifestations pointed to the existence of the pericarditis for about four days before death.

BANTI consequently concluded that in the light of the results obtained from the study of these two cases, the pericardial inflammation was due to toxic substances circulating in the blood in consequence of failure of elimination through the diseased kidneys. He then made some animal experiments and found that rabbits in which the pericardium had been cauterized, developed a more marked fibrinous pericarditis after nephrectomy or ligation of the ureters, than animals in whom the cauterization of the pericardium only was made, and which were killed after the same length of time in which the uremic animals died. While these experiments were not conclusive, yet they seem to support the theory of uremic pericarditis.

In October, 1894, BECO (*Centralblatt für Allg. Path. u. Path. Anat.*, Bd. V, No. 19) describes a germ-free case of sero-fibrinous pericarditis in a chronic nephritic, which he is inclined to interpret as due to toxic substances produced by the bacillus coli communis which was present in the blood and in the spleen. This view is supported by certain experiments of CHARRIN (*Sem. Medicale*, 1894, No. 42, p. 337) which seem to show that the bacterial toxins may cause serositis without the immediate presence of the corresponding microörganisms. In March, 1895, (*Centralblatt für Allg. Path. u. Path. Anat.*, Bd. VI, No. 5) BANTI describes two additional cases of uremic pericarditis in which there were no bacteria either in the pericardium, in the blood or in the spleen, and he concludes that the presence of the bacillus coli communis that BECO found in his case was accidental and due to agonal or post-mortem invasion.

From these interesting observations it does not seem unreasonable to believe that there may be a "toxic inflammation" independent of all direct bacterial influence. Such observations as BANTI's and others, indicate the necessity of a thorough bacteriologic examination of all cases of pericarditis and other serositis in connection with kidney lesions in general. The results obtained are in full harmony with the views concerning auto-intoxication that are rapidly gaining credence at the present time.

INADEQUACIES OF ARBITRARY MILK STANDARDS IN ENGLAND—THE "APPEAL TO THE COW."

MR. RICHARD BANNISTER, one of the best known officers of the Local Government Board of Great Britain, recently occupied the chair as President of the Section on Chemistry and Climatology of the Congress at Hull of the British Institute of Public Health. His presidential address treated chiefly of the work being done by the governmental bodies for the restriction of food products adulteration. He regards the laws as amply framed for the protection of any community, and those communities are blameworthy that refuse to act thereunder. Adulteration is sometimes alleged, especiallly in respect to imported foods, when it does not exist. The existing laws have already effected an incalculable amount of good, notwithstanding the lukewarm support given them.

At this point in his address, according to the *Sanitary Record*, he turned his attention to the all-important subject of the milk supply, a subject which

he held was attended by many more difficulties than is commonly admitted. He presented facts and figures going to show the great necessity to study the milk and butter question in all its bearings, and to see what difficulties there were in the way of carrying out this part of the analyst's duty with justice alike to himself, the producer, and consumer. With regard to milk, many difficulties would be removed if the statement made by an expert to the Parliamentary Committee on Adulteration in 1894 were true, that the quantity of fat varied in milk, but the other constituents were wonderfully constant, and they hardly varied at all, and that according to certain rules he could tell how much water had been added to a given sample of milk, or how much cream had been taken from a given sample of milk. This unfortunately is not the case. Government officers have publicly declared that it would not be in accordance with the design of the Act that a poor man should be subjected to penal proceedings because his cow does not produce as good milk as the better herds of his richer neighbors. It has been suggested that a legal standard for milk should be adopted, and that this standard should be the average composition of commercial milk.

The hardship of such a standard would be felt by persons keeping a few cows or a single cow in country places, but in the case of town supplies the large distributor would be able to lower this standard by the help of separated milk. Again, another point arose, calling for settlement. Cows supplying milk under contract were kept as simple milk-producing machines, kept up and fed in such a way as to produce the maximum quantity of milk of the contract quality. Was milk so produced, though richer in fat and "solids not fat," as wholesome as that produced by the cow when living under normal conditions? In other words, was the percentage of "solids not fat," and fat, the true standard of value of cow's milk when taken as an article of food? This standard had been taken because it required no question to be asked or inquiries to be made as to the origin of the milk under examination, but in the case of direct milk supply to the consumer by the producer this standard needs to be modified; and in fact, it had been modified, by the magistrates. The raising of the standard would not secure the purity of the milk. The large distributors would be able to make larger profits than they do now, and the small producer would be more frequently prosecuted for adulteration through no fault of his own. In Manchester and Salford the sale of adulterated milk appeared to have been reduced to a minimum, the percentage of adulteration in Manchester being 5.4, and in Salford 3.1. This had been brought about by *appealing to the cows* supplying the suspected milk whenever such an appeal could be made. The plan was an expensive one at first, but it eventually paid, and caused the minimum of hardship to producer, distributor, and consumer. In conclusion, the author of the address said:

"Much of the evidence which had been given with reference to mixtures was only a repetition of what was said twenty years ago, before the 1874 Commission, but it had been strongly shown that the trade labored under great hardships from the following causes: 1, the non-acceptance by magistrates trying adulteration cases of the certificate of the analytic chemist employed by the defendant, which necessitated his appearance in person at considerable expense; 2, the refusal of the magistrates to allow the defendant his full costs when the case was decided in his favor; and 3, the refusal of some magistrates to allow an appeal to the referees under the Act, and of not accepting the certificates of referees as evidence in the case. In all such cases justice must be blind; no prejudice must be imparted into the proceedings on one side or the other, and as the proceedings under the Adulteration Act were criminal, it was their duty to lean to the side of mercy and only proceed when the case was free from doubt. The large majority of manufacturers and tradesmen of this country were desirous of suppressing adulteration, and were ready to coöperate with the authorities in so doing. It would, therefore, be a misfortune if by harsh measures they lost the sympathy and support of the right-minded, who were willing to aid them in their great movement of protecting the food supply of the nation from adulteration, or of creating an impression in the minds of the Legislature that the legitimate trade of this country was being fettered and injured by their action."

None of the foregoing conditions apply in this country to any extent, and our chemists have a more elastic scale of allowance for the fat percentage. There is only one reason why milk dealers are prosecuted in the United States, that is for adulteration, and the fat percentage is only taken into account in our analyses when it falls so low as to show that water has been added. The "trade" in this country, have no reasonable complaint, and what the public wants and will have, if it can get it, is pure milk.

MEDICAL EXAMINER'S FEES.

Elsewhere we print a letter from a correspondent who invites attention to recent action of certain life insurance companies, whereby the fees of the medical examiners are to be reduced. This reduction is based on the amount of insurance applied for. It is inconceivable that the companies suppose that an examination can be any different in one case than in another. All cases require the same care and skill, and the same amount of the examiner's time. The amount of money involved in the risk is of absolutely no consequence to the examiner, however much the company may be interested, and we think so unjust a plan should be promptly receded from.

The majority of examiners are already underpaid,

as some of the companies only allow a pittance for an examination requiring not only a great deal of technical knowledge, but the exercise of the highest quality of skilled service, and ability as a cross-examiner.

CORRESPONDENCE.

A Convenient Test for Color Blindness.

LA FAYETTE, IND., Oct. 14, 1895.

To the Editor:—Being called upon frequently to make color tests for railroad employes, I have been using a method which Dr. Carrow of Ann Arbor gave us in a course on ophthalmology. Whether it has been published or not, I can not say. If it has, this will emphasize its importance and convenience, and if not, will describe it for the first time. The skeins of wool have been abandoned as consuming too much time and occupying too much space.

The test consists of a sample card of Corticelli embroidery silk. On the folding card are 269 colors all named. Over the names must be pasted blank paper to hide them. These colors may now be numbered consecutively. In testing, we direct the patient's attention to one of the colors; blue, green or red. We will take, for example, blue, and ask him if he sees any color in the green or red column of colors to correspond. If he says, no, we point out to him the red, and ask him if there is anything in the blue or green column to correspond. If he answers, no, we may then ask him to name and point out the colors we have been comparing. If he answers correctly, he is not color blind to these colors so important in railway service. He must not be told the name of any color. He must tell the examiner correctly.

On the other hand, however, suppose we point out to him a simple blue and ask him if there is any color on the card to correspond and he says there is, and points to green, for example, we know him to be blind to either blue or green. To which one, is easily ascertained by asking him the name of the color to which we directed his attention first. If he calls the blue color, green, we know that he is blind to blue and *vice versa*. If he should say the red is like the blue, we know him then to be color blind to either red or blue. To find out which, we need only ask him to name the colors. If he calls red, blue, we then know him to be blind to red and *vice versa*. If red and green correspond in color to him, his color blindness will be ascertained as above. The rest of the card may be used to ascertain the different shades of different colors to which the applicant may be blind.

GEO. F. KEIPER, M.D.

Life Insurance Companies Reduce Fees.

LA FAYETTE, IND., Oct. 13, 1895.

To the Editor:— . . . Both the Equitable and the New York Life Insurance Companies have lately adopted the graded scale of fees to local medical examiners, thus:

For three thousand dollars or less of insurance . . . $3.
For from three to twenty-five thousand . . . . . 5.

To be brief and plain, I inclose the blank just received from the New York Life Insurance Company; it explains itself.

By the examination of the books of one of our oldest and most reliable life insurance agents in La Fayette, I find that nine out of ten applications for policies are for a less sum than $3,000 insurance showing that this graded scale of fees means a cut of about 40 per cent. from old and established rates. I do not believe that the doctors throughout the country appreciate this, and I wish most earnestly that you would write one of your instructive editorials on this subject to appear in the JOURNAL at an early day. The Equitable circular announcing a reduction of fees is similar to this; in fact, it is my remembrance that it is the same.

With best wishes for the JOURNAL and its editor, officially and personally, I am, dear Doctor,

Very truly yours, W. W. VINNEDGE, M.D.

PUBLIC HEALTH.

Antistreptococcin.—The *New Remedies*, September, gives a brief reference, from its foreign correspondence, to a new remedial serum bearing the name in the caption. It is the latest of the antitoxic serums. It has been developed and brought into the therapeutic field by Professor Marmorek. "It is said to destroy the pathogenic streptococcus absolutely, and will therefore prove of inestimable value in conditions which are now usually abandoned as hopeless. The serum is injected in routine style and does not produce side or after-effects." Marmorek is conducting clinical experiments which will be published as rapidly as consistent with reliability. Early reports thereon have been promised.

A Health Officer Vindicated.—The Bulletin for September of the North Carolina Board of Health gives notice that Dr. John L. Ray, of Burnsville, the Health Superintendent of Yancey County, has received a handsome vindication from certain accusations against him that had found their way into the Public Documents of the State. Typhoid fever occurred in the county jail which was in an unsanitary condition. There were five cases reported as originating there, and from them not less than twenty-four cases were developed among the townspeople. Dr. Ray used due diligence in reporting the cases, in applying disinfectants, and in urging the cleansing of the jail by the officers having charge of that institution. Notwithstanding his courageous efforts, the Public Documents contained a severe criticism, alleging neglect of duty. This criticism, when sifted, was found to be based in part upon a forged report by a clerk of the court. The vindication of Dr. Ray is found in a numerously signed certificate as to the qualifications and energy of the Superintendent, and as to the falsity of the allegations published in the Documents. Among the signers of the certificate are the physicians of the town, or nearly all of them, the mayor, the postmaster, the Representative, the marshal, an alderman, a justice and a score of lawyers and merchants. It appears from the Bulletin, that a betterment of the condition of the jail has been effected, following upon the appointment of a new jailer, together with a reduction of the dangers to the community from typhoid fever. The Bulletin congratulated Dr. Ray on the fact that his courage and efficiency have been vindicated beyond question by a host of competent witnesses.

Health Reports.—The following health reports have been received at the office of the Supervising Surgeon-General, Marine-Hospital Service:

SMALLPOX—UNITED STATES.

New Orleans: October 5 to 12, 2 cases, 2 deaths.
Michigan: Battle Creek Twp., October 5 to 12, smallpox reported; Detroit, October 5 to 12, smallpox reported.
Wheeling: July 1 to September 30, 3 deaths.
Tennessee: Shelby County, September 15 to October 15, 3 cases; Memphis, September 15 to October 15, 4 cases.

SMALLPOX—FOREIGN.

Antwerp: September 21 to 28, 1 death.
Cairo: September 9 to 16, 2 deaths.
Calcutta: August 31 to September 7, 2 deaths.
Corunna: July 1 to September 30, 1 death.
Dublin: September 21 to 28, 18 cases, 2 deaths; Dublin, September 28 to October 5, 11 cases, 1 death.
London: September 21 to 28, 234 cases, 2 deaths; London, September 28 to October 5, 1 death.
Madrid: September 24 to October 1, 1 death.
Manchester: September 21 to 28, 4 cases.
Montevideo: August 31 to September 14, 2 cases, 1 death.
Naples: September 28 to October 5, 1 case, 1 death.
Odessa: September 21 to 28, 1 case.
Prague: September 21 to 28, 2 cases.
Rio de Janeiro: September 7 to 21, 135 deaths.
Rotterdam: September 28 to October 5, 2 deaths.
St. Petersburg: September 14 to 28, 10 cases, 1 death.
Southampton: September 28 to October 5, 1 case.
Trieste: September 21 to 28, 2 cases.

CHOLERA.

Calcutta: August 31 to September 7, 6 deaths.
Cognac: September 29 to October 5, 1 death.
Madras; August 31 to September 6, 6 deaths.
Osaka and Hiogo; September 7 to 21, 99 cases, 77 deaths.
Tangier: September 1 to 30, 800 cases, 600 deaths.
Honolulu: August 18 to September 28, 87 cases, 62 deaths.
Damietta: October 15, 15 cases, 3 deaths.
Japan: fifty cities and towns September 13 to 19, 3,336 cases, 2,680 deaths.
From beginning of epidemic to September 19, 46,009 cases, 31,198 deaths.

YELLOW FEVER.

Cienfuegos, September 6 to 13, 2 deaths; Cienfuegos, September 30 to October 6, 4 deaths.
Rio de Janeiro: September 7 to 21, 6 deaths.
Sagua la Grande: September 28 to October 12, 30 cases.
St. Johns, Antigua: September 23 to 30, 3 cases, 3 deaths.
Santiago de Cuba: September 28 to October 12, 19 deaths.

NECROLOGY.

SURGEON-GENERAL SIR THOMAS LONGMORE, C.B.—We regret to announce the death of Surgeon-General Sir Thomas Longmore, C.B., which occurred Sept. 30, 1895. He was born in London, Oct. 10, 1816. His father was a surgeon in the Royal Navy. He was educated at Merchant Taylors School. In due course of time he became a student at Guy's Hospital. He was dresser to Mr. Bransby Cooper, assisted that surgeon in his private practice and in writing the life of Sir Astley Cooper. He arranged and catalogued the museum of that great surgeon, afterward purchased by the Royal College of Surgeons of England. He became M.R.C.S.Eng., 1841, and F.R.C.S., 1856, and Fellow of the Royal Medical and Chirurgical Society. He was gazetted Assistant Surgeon 19th Regiment Feb. 3, 1843; served with that regiment in the Ionian Islands, the West Indies, and Canada, returning to England in 1851. He was gazetted Surgeon of his regiment in March, 1854, and served as Surgeon of the 19th Regiment in the Light Division of the Eastern Army, from its first taking the field throughout the campaign of 1854–55, until the termination of the siege of Sebastopol; he was not absent from duty one day during the campaign. He was present at the affair of Bulganac, battles of Alma and Inkerman, capture of Balaclava, assaults on the Redan June 18 and September 8; and received the medal and three clasps, and the Turkish medal, and was named a Knight of the Legion of Honor. He served with the 19th Regiment in the Sepoy Mutiny war until promoted Deputy Inspector-General of Hospitals in 1858. On his return to England he was appointed P.M.O. at Colchester. In 1860 he was appointed by Lord Herbert, then War Minister, Professor of Military Surgery at the new Army Medical School, and delivered the opening address in the presence of that Minister, the General Commanding the District, and other officers of distinction.

In 1864 he represented the British Government at the International Congress at Geneva. At this Congress the International Treaty, since known as the Convention of Geneva of August 22, 1864, was formally adopted, and he was a member of the Committee that settled the terms of the Convention. In 1867 he took part, by order of the Secretary for War, in the international conferences of the societies for aid to wounded soldiers in time of war. In 1867 he was nominated a Companion of the Military Division of the Most Honorable Order of the Bath, and in the following year he was gazetted Honorary Surgeon to Her Majesty the Queen. In 1866 the Societé Impériale de Chirurgie de Paris elected him Correspondant Etranger. In 1869 he again represented his Government at a Conference in Berlin on Aid to Sick and Wounded in War. In 1872, and again in 1873 and 1876, Surgeon-General Longmore represented the British Government at Vienna and Brussels for the settlement of international agreements relating to sick and wounded in war, and took, in a mixed committee of military and medical officers, an active part in establishing the bearer companies, and most of the existing field hospital arrangements of the British Army. On five other occasions he represented his Government at foreign congresses, and was elected an Associé Etranger of the French Academy of Medicine and other scientific societies. In 1879 he was promoted by decree of the President of the French Republic to the rank of Officier in the Legion of Honor, the insignia of which, by Royal license, he was permitted to wear. In 1886 he was knighted by the Queen at Osborne, and in the following year the Military Medical Services presented the fine portrait of Surgeon-General Longmore to the Army Medical Department, by George Reid, R.S.A., of Edinburgh, which adorns the anteroom of the mess-room at Netley.

This JOURNAL for August 24, 1895, contained an exhaustive review of Sir Thomas Longmore's last published work.

JAMES COLLINS, M.D., died suddenly of heart failure, on the 7th inst., at his home in Philadelphia. Dr. Collins was 65 years of age, and a native of Pennsylvania. He was a well-known surgeon and had been connected with the German Hospital of Philadelphia, as a prominent member of its staff for thirteen years, and was also a member of the AMERICAN MEDICAL ASSOCIATION. He attended the Philadelphia County Medical Society regularly and was a highly valued member. At its meeting held September 25, the President being absent, Dr. Collins was, on motion, elected chairman *pro tem.* He was graduated by the University of Pennsylvania, Medical Department, in 1860 and afterward by Göttingen University. He was appointed Surgeon of the 3rd Regiment Pennsylvania Reserve Corps in 1861, and served in the Army of the Potomac; where he was captured and remained in Libby Prison until 1862. He subsequently became Surgeon of Volunteers with the rank of Brevet Lieutenant Colonel. He was executive officer at Depot Field Hospital, at City Point, and was mustered out at the close of the war. He was a member of the Board of Examiners of Pension Surgeons and was a member of Meade Post, G.A.R. For seven years Dr. Collins served as demonstrator of surgery in the Medical Department of the University of Pennsylvania, but although an operator of good judgment and great skill, he was not a fluent speaker, so he gave up this field with reluctance and devoted himself to clinical surgery at the German Hospital, with which he was connected as consulting surgeon at the time of his death. Dr. Collins was a charitable, amiable and public-spirited man and had a large circle of acquaintances in the upper portion of the city. He leaves a widow.

ALBERT E. FOOTE, M.D., well known for his devotion to mineralogy and scientific studies, died at Atlanta, Georgia, on the 10th inst., where he was engaged in supervising the mineralogic exhibit of the State of Pennsylvania. Dr. Foote was born in Hamilton, N. Y., Feb. 6th, 1846. He was graduated at Ann Arbor in 1867, and afterward remained for a year as instructor in chemistry at the University of Michigan. He then accepted a position at the Iowa State College as professor of chemistry and mineralogy and held the chair for five years. For the last twenty years, he has resided at Philadelphia, engaged in his profession as mineralogist and in the sale of scientific and medical books. He was a member of the American Association for the Advancement of Science, the American Geological Society, the New York Museum of Natural History and of the Academy of Natural Sciences of Philadelphia.

ETHAN SPENCER, M.D., formerly of Indiana, but who has been residing in this city with his son, died at the latter's residence, of old age, October 17. Dr. Spencer was one of the pioneer physicians of Southern Indiana. He was born in New York city in 1812, and when quite a young man removed to Ohio. During his stay there he received a land grant from the government to several hundred acres, near Booneville, Ind. It was here he first began to practice, later removing to Evansville where he amassed a large fortune. He launched into mercantile life and lost his fortune in the panic of 1872. He again began the practice of his profession, in Evansville, where he continued actively at work until about four years ago, when he removed to this city, to live with his son. His remains will be taken to Evansville, for burial.

J. P. WELCH, M.D., formerly of Esmeraldo, New Mexico, now of St Johns, Arizona, requests that his friends be notified through the JOURNAL of the death of his wife, which occurred September 21.

S. F. RODOLPH, M.D., of San Francisco, October 9——E. W. Buck, M.D., of Los Gatos, California, October 5, aged 68.——Michael Price, M.D., of Harrisburg, Pa., October 11.——J. V. Holson, M.D., of Lynchburg, Va., October 11, aged 85.——John T. Witherspoon, M.D., of Lawrenceburg, Ky., October 12, aged 25.——Timothy B. Cox, M.D., of Frankfort, Ind., October 16, aged 79.——F. M. Warner, M.D., of New York city, October 9, aged 48.——R. H. McFarland, M.D., of Orlando, Fla., October 9, aged 78.——Geo. W. Davis, M.D., of South Jacksonville, Fla., October 9, aged 74.

BOOK NOTICES.

Transactions of the First Pan-American Medical Congress. Held in the City of Washington, D. C., U. S. A., Sept. 5, 6, 7 and 8, 1893. In two vols., pp. 2,250. Washington: Government Printing Office. 1895.

The contents of these two large volumes consist mostly of the papers and discussions read at the first meeting of this great Congress. Abstracts of them were flashed by wire to the medical journals at the time, and from time to time for six months after the meeting of the Congress the papers themselves appeared here and there, and as a rule they enriched medical literature. But there is much in the book that will be of permanent value. The vast work of organization which devolved upon President Pepper, Secretary-General Reed and their colleagues, has its story partially told in the opening of the volume. Those familiar with the organization will not need any glimpses behind the scenes to supply the unwritten part of that history.

We can not undertake in this brief notice to write a review of these great volumes. It is, however, proper that we should caution our Mexican confrères against the repetition of the mistake of too fine subdivision of the Sections. General surgery, for instance, was nearly ruined by the intense desire to create new sections, in some cases, after the formation of the originl Section. "Orthopedic" Surgery, "Railway" Surgery, "Military" Surgery, Gynecology and "Abdominal" Surgery, "Oral and Dental" Surgery each claimed a separate section. This came near destroying the usefulness of the Section. Some of them doubtless may be legitimately separated, but the limited discussion of papers that followed such minute divisions was a serious loss to the Congress. So far as the papers are concerned, they are in the book under the same roof and the same man may consult all of them at his convenience, but he could not attend the different Sections in which he was interested at the time of the meeting.

The importance of this initial meeting can not be overestimated when its bearing on the future of American medicine is considered, and the opportunity which was for the first time afforded of carrying into effect the wishes of the American statesmen who for all these years, since the foundation of our Republic, have wished for closer union politically commercially, professionally and socially. The great learning and far-sighted wisdom of President Pepper, the industry and energy of Secretary-General Reed, and the devotion of the Chairmen and Secretaries of the Sections have made the Congress a creditable one from the standpoint of American medicine, and we doubt not that when the second Pan-American Congress shall be called to order in the City of Mexico, the doings of the first Congress will be taken as a model, and when the Christmas chimes of 1896 are pealing forth a welcome to the adherents of the new Congress, there will be a refrain pleasing to the ears of the constituents of the old Congress, having for its burden, "Well done, thou good and faithful servants."

A Text-Book of Practical Medicine. Designed for the use of Students and Practitioners of Medicine. By ALFRED L. LOOMIS, M.D., LL.D., Professor of Pathology and Practical Medicine in the Medical Department of the University of the City of New York; Visiting Physician to Bellevue Hospital, etc. Revised and enlarged, with 207 illustrations and 1 chromo-lithographic plate. Eleventh Edition, 1,134 pages. Price, cloth, $6; leather, $7.

The prefatory note by the publishers states that, "Dr. Loomis was actively engaged in the revision of the present volume at the time of his last illness and had completed the greater portion of the work. Since his death only such alterations and additions have been made as seemed necessary. Dr. G. C. Cokely, Dr. E. D. Fisher, and Dr. Warren Coleman assisted in the preparation of the present volume."

Few text-books on the practice of medicine in this country have been more widely read than this book of Professor Loomis, and this edition will be referred to with melancholy interest as a posthumous production, although the revision was far advanced when Dr. Loomis was stricken with his last illness. In this edition the articles on endocarditis, cardiac fibrosis, and cardiac palpitation have been re-written. Arrhythmia, tachycardia and brachycardia have been added to the list of cardiac neuroses. Dysentery has been placed among the infectious diseases; acute infectious jaundice has been added, and the introduction of malarial fever has been brought in accordance with bacteriologic teachings on the subject. The chapter on bacteriology, although brief, gives the essentials on the subject.

In regard to antitoxin, after giving the claims of the advocates for it and those of the opposition, the subject is summarized as follows (p. 739): "When good observers report so exactly opposite on the effects of antitoxin, it behooves us to administer the substance cautiously, or wait for the results of more extended observation."

It is probable that with occasional revisions this work will continue to hold its enviable position among works on the practice of medicine for many years to come.

Herrick's Diagnosis. A HANDBOOK OF MEDICAL DIAGNOSIS. By JAMES B. HERRICK, M.D., Adjunct Professor of Medicine, Rush Medical College, Chicago. In one handsome 12mo. volume of 429 pages, with 80 engravings, and 2 colored plates. Cloth, $2.50. Philadelphia: Lea Brothers & Co., Publishers. 1895.

Although, as the author says, this book is intended chiefly for the use of students, it will be found extremely useful to all grades of practitioners. It is very well written, devoid of circumlocution, and shows throughout that its author is fully competent to write on the subject. It may be said to be fairly a Chicago book, inasmuch as it is the outcome of the author's experience in the Cook County and Presbyterian Hospitals. It must not, however, be inferred that contemporaneous literature has been ignored; on the contrary, there are few omissions of any important facts.

The contents of the book, after the introduction and general considerations, include a discussion of the diagnosis of: I, Infectious Diseases; II, Diseases of the Digestive System; III, Diseases of the Respiratory System; IV, Diseases of the Circulatory System; V, Constitutional Diseases, including Diseases of the Blood and Ductless Glands; VI, Diseases of the Kidneys and Genito-Urinary Organs; VII, Diseases of the Nervous System; VIII, Diseases of the Spinal Cord and its Coverings; IX, Diseases of the Brain and its Coverings, and X, Functional Nervous Diseases.

It is thus seen that the scope of the work is that of a general medical diagnosis, and the author has made a fair epitome of the entire subject. The work is creditable to the author and publisher from every point of view.

Foster's Physiology. TEXT-BOOK OF PHYSIOLOGY. By MICHAEL FOSTER, M.D., F.R.S., Prelector in Physiology and Fellow of Trinity College, Cambridge, England. New (Sixth) American Edition with notes and additions. In one handsome octavo volume of 922 pages, with 257 illustrations. Cloth, $4.50; leather, $5.50. Philadelphia: Lea Brothers & Co.

When a book has passed to its sixth edition there is little that can be said by the reviewer which will either make or mar the book, and there are few text-books on physiology better known in this country or in Europe than that of Foster. In this American edition a strong effort has been made to eliminate all superfluous words and condense it as much as possible. Few practitioners, either in general or special practice, keep abreast of the advances in physiology, and this is the more lamentable because of the great aid a knowledge of this branch of science is in every single medical or surgical specialty. No practitioner can read a recent book on physiology without being greatly benefited by it. Our knowledge of pathologic processes must bear certain and definite proportion to our knowledge of the operations of the body in health, and he who neglects the study of physiology deprives himself of one of his most certain supports. The book under consideration has been carefully

revised and will be found fully up to date. It has almost become in this country as in England as standard as "Gray's Anatomy."

Taylor on Venereal Diseases. THE PATHOLOGY AND TREATMENT OF VENEREAL DISEASES. By ROBERT W. TAYLOR, A.M., M.D., Clinical Professor of Venereal Diseases in the College of Physicians and Surgeons, New York. In one very handsome octavo volume of 1,002 pages, with 230 engravings and 7 colored plates. Cloth, $5.50; leather, $6.50. Philadelphia: Lea Brothers & Co., Publishers. 1895.

This book is the direct successor of the well-known work of Bumstead and Taylor on venereal diseases, and gives the author's conclusions as a result of his own extensive researches and wide experience. To this he has added the results of a careful sifting of the literature of the subject down to the present time. The book is divided into three parts as follows: Part I, forty-two chapters devoted to gonorrhea and its complications. Part II, seven chapters, devoted to chancroid or soft chancre. Part III, thirty-eight chapters, devoted to syphilis. As an exhaustive treatise on the subject, at the same time one that is painstaking and accurate, it will be a work to which the surgeon will turn for reference whenever he has occasion to study the subject. The dosage is partly in the decimal, and partly in the old system, that is, when a continental author is quoted the decimal system is used. The book is in every way creditable and affords a further illustration, if any were needed, that in these days it is not necessary to buy a foreign book in order to keep fully abreast of the scientific knowledge of the day. We are confident that Dr. Taylor's work will meet with even more pronounced success than the former works in which he was engaged with the late Dr. F. J. Bumstead.

Surgery. A PRACTICAL TREATISE WITH ESPECIAL REFERENCE TO TREATMENT. By C. W. MANSELL MOULLIN, A.M., M.D., Oxon. Assisted by various writers on special subjects. With 623 illustrations, many of which are printed in colors, about 200 having been made from special drawings. Third American Edition, revised and edited by JOHN B. HAMILTON, M.D., LL.D., etc. Cloth; pages 1,250. Philadelphia: P. Blakiston, Son & Co. 1895.

In the prefatory note to this edition, the editor states that the entire work was passed through the press in the period of six weeks—a most unusual record even in this age of many improved facilities. The revision of this book was undertaken with the express purpose of striking out every superfluous word in it, leaving nothing but the solid text, and then to add whatever was new that was necessary to bring it in harmony with the latest teachings on the subject. New illustrations have been added, and it may be confidently stated that the book is not surpassed by any single volume text-book of surgery on the market for the use of general practitioners and students. The illustrations are from the latest text-books, and those examining the work will find that omissions are very few.

Gray on Nervous and Mental Diseases. A TREATISE ON NERVOUS AND MENTAL DISEASES. By LANDON CARTER GRAY, M.D., Professor of Diseases of the Mind and Nervous System in the New York Polyclinic. New (Second) Edition, In one very handsome octavo volume of 728 pages, with 172 engravings and 3 colored plates. Cloth, $4.75; leather, $5.75. Philadelphia: Lea Brothers & Co., Publishers. 1895.

It is a pleasure to write a notice of a book of this character. The well-known literary attainments of the author, the fine paper and beautiful text, the elegant illustrations, many of which are in colors, make it easy to understand why this book has passed to a second edition. Five new chapters have been added in this edition, namely: Dementia, Dementia Paranoides, Confusional Insanity, Delirium, and Massage. "The word treatment," says the author, "has been construed in the broadest sense to include not only medicinal and non-medicinal agents, but also those hygienic and dietetic measures which are often the physician's best reliance."

In regard to massage, the author says: "In cases of individuals who, for various causes, are unable to use their muscles, or in others who are necessarily confined to their room or to bed, massage is an invaluable therapeutic agent. The great difficulty about it is there are few persons expert in the giving of it. For several years I almost abandoned its use for this reason, and it has only been since I have kept in my employ a masseur that I have been able to rely upon it. In some instances I have known physicians instructing some nurse so as to obtain very creditable results."

This edition will be found carefully revised and brought up to date with the exception of the prescription writing, in which the old system of dosage is still adhered to. The book will be found as interesting as its predecessor and retaining all of the characteristics which made the first edition popular.

Synopsis of a Course of Lectures on the Anatomy, Physiology and Histo-Chemistry of the Nervous System. By JOHN A. BENSON, M.D. Chicago: E. H. Colegrove & Co. 1895.

This is a complete syllabus of a course of lectures on its titular subject, in which the author's experience as a physiologist and his practical ability as a teacher are well displayed. We commend the syllabus to those who are interested in the subject.

Case Recorder in General Medicine and Gynecology; for the Use of Physicians, Students, Dispensaries and Hospitals. By S. B. LYON, M.D. Milwaukee: A. L. Koursh & Co. 1895.

We have examined this clinical record with some care, and have to say that for minuteness and completeness we have not seen its equal. Every possible symptom has a place wherein it can be recorded, and those who desire to keep accurate records of their patients will find this a most useful record book.

Bernd's Physicians' Register. St. Louis, Mo.: Henry Bernd & Co.

This register is admirably adapted for the keeping of accounts with patients, and doctors who are said in some quarters to be poor business men, can be made good ones, so far as the keeping of their accounts is concerned, if they will take pains to provide themselves with this admirable record.

MISCELLANY.

Septicemia.—The latest treatment for general septicemia is hypodermic injections of creasote. The creasote is mixed with equal parts of camphorated oil, and 20 minims of the solution are injected three times a day.—*Journal of Practical Medicine*, October, 1895.

Illinois State Medical Society.—The Transactions of the Illinois State Medical Society were sent to the members last week by express. Those who are in arrears may receive the volume by at once remitting their annual dues to the Treasurer, George N. Kreider, M.D., Springfield, Ill.

Medical Advertisements.—In its issue of October 15, *The Medical Fortnightly* gives notice that it has adopted the rule that it will not accept advertisements of medical preparations, the proprietors of which do not give a formula containing the official or chemic name and quantity of each composing ingredient to be inserted as a part of the advertisement.

Hospitals in Jerusalem and Damascus.—An English medical missionary, Dr. Masterman, at present residing at Jerusalem, reports that progress is being made with the erection of the new mission hospital at Jerusalem. The hospital will have beds for forty patients, and will also have a dispensary. It is outside the city, on the freehold property of one of the London societies known as the "Sanitarium," about three-quarters of a mile from Jaffa Gate. A hospital at Damascus will shortly be opened. Dr. Masterman will take charge of the work for a year, at the expiration of which time a permanent medical appointment will probably be made.

Parvin on Boerhaave.—In the *Medical and Surgical Reporter* is quoted a letter from Dr. Parvin, narrating his medico-vacational tour through Holland. He found much to interest him in the Dutch cities, inclusive of Leyden. Of that city he writes: "Leyden interested me chiefly because there Boerhaave lived and taught. It seems to me that Medicine has given the world few greater, and none better than he. His monument, with its brief inscription, scarcely more than date of birth and date of death, reveals a man of commanding appearance, and of large head, with prominent forehead."

Divorce Denied.—A cruel statement is telegraphed from Kansas City, to the effect that one of the "New Women" who practices medicine in that town, was refused a divorce by an unfeeling judge, who asserted that the reasons urged by her were insufficient to warrant the issuance of a decree. It seems that the bill of the plaintiff alleged that the wicked husband refused to cook the meals while she was engaged in daily practice of her profession, and that he would not even help her prepare the meals, but "laid around" while she was thus engaged. The complainant's tale of woe is probably unique, and deserves more mention than it is likely to receive.

An Old Garbage Dumping Ground.—Riker's Island, near New York city, was for a time used as a dump for garbage. This use was perforce abandoned on account of the villainous odors caused thereby. The subsequent story regarding the place is interesting, as showing how difficult it is to throw anything away. One of the New York papers tells that story as follows: "Riker's Island was a barren aggregation of rocks, not too far from New York to be reached and not near enough to be noticed. It seemed a handy spot to dump garbage and garbage accordingly was dumped on it. The garbage smelled bad, so earth was spread on top of the garbage. Then it was left alone. It began to smell bad again about a month ago, and its neighbors complained. Then an explorer was fitted out to investigate it. He came back with a great load of vegetables, and the surprising tale that Riker's Island had dreamed it was a kitchen garden, and that the dream had come true. The vegetable seeds in the garbage had grown up through the top-dressing of soil, and behold profusion itself—melons, pumpkins, squashes, tomatoes, and other fruits of the earth glowing and ripening in their seasons, with no one to hinder and no one to glean."

Progress of Dentistry in Japanese Cities.—An eminent correspondent of the New York *Herald*, having been inquired of regarding the field for American dentists in Japan, has written a letter discouraging in its tenor, that is abstracted in the following: "Japan is full of dentistry, and the native dentists are flourishing. There is a dental department connected with the medical branch of the Tokyo Imperial University. There are fifty-six practicing dentists in Tokyo, and each office has from four to twelve students. These young men assist at all operations. One works the drill, another handles the syringe, another passes up the gold foil, and the division of labor is quite scientific. Many of the Japanese dentists are graduates of firstclass American colleges. They are quite skillful. The Japanese are fond of having their front teeth filled with gold. They frequently have holes bored in good teeth in order to have them plugged and polished. They think that the exhibit of gold fillings in front teeth suggests advanced civilization. San Francisco turns out about one hundred young Japanese dentists a year. There is a factory in Tokyo which turns out all manner of dental instruments and dental goods, including engines and porcelain teeth."

Distribution of Population in New York and Philadelphia, London and Paris.—The New York *Sun* contains some census comparisons that are of interest to medical readers, showing how the people of certain large cities in this country and Europe are housed. New York has 115,000 houses, averaging 18 residents to each. London, the greatest accumulation of inhabitants in the world, has 600,000 houses, or 7 residents in each on the average. London has increased in this respect very rapidly, for at the beginning of the present century the number of houses was only 130,000, little more than New York has at the present time. The population of London at that time was 960,000. It is now 4,200,000. So it has increased nearly fivefold, but the number of houses has not increased in as large a ratio. Paris has 90,000 houses. At the close of the Franco-Prussion war it had 70,000. At the close of the Napoleonic wars it had 28,000. The area of the city has been extended meanwhile. The average number of residents in a house in Paris is 25, which is about 50 per cent. greater than in New York. In all computations of city population by houses, Philadelphia ranks as a shining example of a big town which has plenty of "elbow-room" to expand in. Philadelphia, with a population in excess of 1,000,000, has 137,000 houses. It is less densely populated than London, but not much less so.

Pharmacy Law of Oklahoma.—The pharmacy law of the Territory of Oklahoma has been amended so that it is in part as follows, the old provisions on the same subject being inclosed in quotation marks: "Any person in order to be qualified [as a pharmacist], shall be 21 years old, and shall have passed a satisfactory examination before the board of pharmacy of the Territory of Oklahoma," or shall produce a certificate of pharmacy, regularly issued to him under the authority of any State or Territory, and prove that he is in good standing in that State or Territory, "or shall be a graduate of pharmacy, as hereinafter provided:" *Provided, however*, That nothing in this chapter shall be construed to prevent any physician duly authorized to practice medicine in this Territory from keeping drugs for use in his profession, and compounding his own prescriptions. Pharmacists having passed the examination provided by the board of pharmaceutic examiners, and being duly registered, as provided by law, it is also enacted, are to be exempt from all jury service.

Milk Typhoid at Simla in Northern India.—The *Sanitary Record* has an item referring to the outbreak of fever at Simla, a summer resort for Indian officers and Europeans doing business in and around Bombay and other cities. It says: "Several cases of typhoid fever which have occurred lately are attributed by Dr. Cunningham to the sale of impure milk, brought in from villages in the surrounding native States. Dr. Cunningham has addressed a very strong remonstrance to the Municipal Committee on the subject, and urges the necessity of immediate action being taken."

Congenital Unilateral Absence of the Kidney.—Ballowitz (*Virchow's Archiv*, Bd. 141, Heft. 2), makes a literary and statistic study of 210 cases of congenital absence of one kidney and adds three cases of his own.

The combined statistics of Brown (*Journal of Anat. and Phys.*, XXVIII, 1894), Morris (*Brit. Med. Journal*, 1885, vol. I, p. 314), Sargalli (*Reale Instituto Lombardo Rendicont*, Ser. II, vol. IX, 1876), Mensies (*Jour. Anat. and Phys.*, vol. XXI, 1887), and Rootes (*Lancet*, 1866, vol. II, p. 251), show one kidney to have been absent eleven times in 27,806 post-mortem examinations. Of the 213 cases of single kidney collected by Ballowitz the defect occurred one hundred and seventeen times on the left side and eighty-eight times on the right. In 112 male bodies the kidney was absent seventy times on the right side and forty-two times on the left. In sixty-five female bodies the left kidney was absent thirty-one times, the right thirty-four times. Consequently the figures show that single kidney is found nearly twice as often in male as in female bodies, and that in the male bodies the left kidney is much more frequently absent than the right. When a kidney is absent the corresponding renal vessels are practically always also absent. The ureter was also absent except in fifteen cases. The shape of the single kidney is generally

the normal one and it usually occupies its normal position, but it is very often the seat of a compensatory hypertrophy—in one instance the single kidney weighed 440 grams. The urinary bladder was usually normal with the exception of the absence of one of the ureteral orifices. In 111 of the 213 cases mention is made of the adrenal, which was present in eighty, absent thirty-one times on the same side as the absent kidney. In 103 of the 213 cases, mention is made of the genital organs. In thirty cases it is emphasized that these organs are normal. In seventy-three cases there are noted defects of the generative organs, viz, in twenty-eight male and forty-one female bodies (four times the sex was not or could not be determined). Single kidney is consequently much oftener accompanied with genital defects in females—41:71—than in males—28:113. These sexual anomalies occur almost exclusively on the same side as the kidney is absent and involve usually the system of excretory ducts, rarely the ovary or the testis, although the latter may be either hypoplastic or atrophic. There was a uterus unicornis eighteen times, complete absence of one Fallopian tube three times, anomalies or defects in the external genitals nine times; of the forty-one cases of genital defects connected with single kidney in females the ovary on the hypoplastic side was absent only three times. In the male bodies the vas deferens and seminal vesicle were completely absent thirteen times; in the four cases in which reference is made to the ejaculatory duct it was also absent. In three cases the seminal vesicle alone was absent. The testis was absent only twice, eight times it was atrophic. The epididymis was nearly always rudimentary in these cases of genital defects connected with single kidney in males. In four cases the lateral half of the prostate corresponding to the aplastic side was distinctly smaller than the other half, but very few investigators paid any attention to the condition of the prostate. Single kidneys are exceedingly liable to the formation of calculi. Cystoscopic examination might lead to the diagnosis of single kidney when only one normally situated ureteral orifice is found. Abnormal conditions connected with the genital organs, such as the probable absence of a vas deferens, asymmetry of the prostate, etc., should also suggest absence of the kidney on the same side. Ballowitz does not discuss the embryologic relations of unilateral absence of the kidney and the associated genital defects.

Treatment for Oklahoma Inebriates.—Any inhabitant of the Territory of Oklahoma who is of kin to, or a friend of, any habitual drunkard who is resident of the Territory and the head of a family, the Legislative Assembly has ordained, may petition the board of county commissioners of the county of the residence of such habitual drunkard for leave to send such person, at the expense of said county, to an institute within the Territory, for the medical treatment of drunkenness and morphinism, as said board of county commissioners may designate, at an expense of not to exceed $100, including board and lodging; but the sending of such person to such an institution shall be discretionary with the commissioners, and not more than four persons shall be sent from the same county in any one year. The petition referred to must set forth, among other things, that such person or those of his kin petitioning, are not financially able to incur the expense of his cure, and that he is willing and will agree to attend such institute for the cure of drunkenness and morphinism, as well as contain his written agreement to that effect and that he will abide by and comply with the rules of such institute.

Society Notes.

THE NEW YORK STATE MEDICAL ASSOCIATION, which was in session three days in the Mott Memorial Hall, at No. 64 Madison Avenue, adjourned October 17, after electing the following officers: President, Darwin Colvin, of Clyde; Vice-Presidents, C. H. Glidden, of Little Falls; Thomas Wilson, of Claverack; S. G. Seaman, of Seneca Falls, and J. R. Vandeveer, of this city; members of the Council, W. H. Robb, George E. McDonald, J. G. Truax, E. M. Moore Jr., and W. L. Ayer; Secretary and Treasurer, E. D. Ferguson, of Troy.

AT the annual meeting of the Vermont State Medical Society, the following officers were elected for the ensuing year: President, C. F. Branch, Newport; Vice-President, Lyman Rogers, Bennington; Secretary, D. C. Hawley, Burlington.——The Southeastern Medical Association held their annual meeting in Middlesborough, Ky., October 11.——The semi-annual meeting of the Cumberland County Medical Society was held in Bridgeton, Pa., October 8.——The Delta Medical Association held a regular meeting at Greenville, La., October 10.——A meeting of the Toledo, Ohio, Medical Association was held October 11.

Hospital Notes.

THE plans and specifications for the alterations of the Kings County Hospital, N. Y., have been approved by the State Board of Charities and work will be begun immediately.——The foundation for the new Protestant Hospital at Bloomington, Ill., has been laid.——The West Philadelphia department of the Rush Hospital was formally opened October 9. The new institution has accommodations for twenty patients.——The Alexian Brothers Hospital in Chicago has been sold and will be removed to a better site within a period of two years.

St. Louis Notes.

THE MORTUARY REPORT for the week ending October 19 shows total deaths 178 as compared with 198 during the preceding week and 185 for the corresponding week of last year. Deaths under 1 year, 33; under 5 years, 54. Death rate 16.5 per 1000.

CONTAGIOUS DISEASES—Reported during the week ending October 19: diphtheria, 134 cases, 16 deaths; croup, 13 cases, 4 deaths; scarlatina, 5 cases, 1 death; typhoid fever, 18 cases, 5 deaths; whooping cough, 4 cases, 2 deaths.

ST. LOUIS MEDICAL SOCIETY.—The discussion at the regular weekly meeting, October 19, was led by the ophthalmologists. The question of the admission of the reporters for the daily press was brought up for renewed consideration, but a former resolution excluding them was not altered.

ST. MARY'S INFIRMARY.—The present building of this institution now proves entirely too small to accommodate the increasing number of applicants for charitable medical attention and the Sisters are making a public appeal for subscriptions to enable them to enlarge the building. The Infirmary is largely supported by voluntary subscriptions, which during the last year made it possible to care for 700 patients.

THE CITY HOSPITAL.—The carelessness of a male nurse has resulted in the death of one of two patients whom he poisoned with corrosive sublimate. The doses of the bichlorid were administered for doses of magnesium sulphate.

THE CITY INSANE ASYLUM is again opened by the Board of Health for clinical teaching; the privilege of clinical demonstration of cases of insanity is extended alike to all the medical schools.

PRODUCTION OF DIPHTHERIA ANTITOXIN.—Prof. G. C. Crandall in charge of the Bacteriological Laboratory of the Marion-Sims College, is conducting experiments with a view to produce this remedy.

THE PUBLIC INTEREST IN INSANITY in its medico-legal relations is in no danger of languishing for lack of material to busy itself about. Within the week the City Board of Health has had presented to it petitions signed by 600 persons, praying for the release from the City Asylum of a paranoiac confined there. The superintendent refuses to release the individual in question, save by process of law. His statement of his position is entirely correct, since he is by law the sole judge of a patient's fitness or unfitness for discharge. This particular person he regards as a dangerous *persecuteur* and he will not accept the responsibility of placing him where he can do harm. It is presumable that not one in a hundred of the petitioners are personally acquainted with the object of their solicitude, much less with the nature of the responsibility they are so anxious to assume.

THE TRIAL OF THE MURDERER DREHER is set for the present week. The case hangs upon the question of simulated insanity. Strong testimony to show that the prisoner is simulating a form of mania will be met by testimony showing the prisoner to be insane. Whatever the result for the prisoner, the good repute of the profession is sure to suffer in the eyes of law and laity. With such examples as this and the Duestrow case, it would seem that the medical profession must see the need of a united effort to reform the present method of calling out the testimony of medical experts.

Louisville Notes.

TEXAS FEVER.—The report of the State Board of Health representatives, Dr. Eisenman, veterinarian, and Dr. Cashin, bacteriologist, is complete, so far as Louisville is concerned, and the surprising record is made of 250 cattle dead. The serious import of this is realized when it is known that all of these were milch cows owned by dairymen who have furnished milk to the people of Louisville. This number is perhaps greater than has been reported during the past twenty years in any epidemic, due in part, perhaps, to the prompt action of the State Board of Health in appointing inspectors. The unusual prevalence of this disease among our Kentucky cattle is explained by the bacteriologist, Dr. Cashin, as being due to the southern cattle brought here, having upon them a small tick or bug; these southern cattle, or the majority of them have the disease. The ticks draw the bacilli or other cause contained in the blood, and when the infected cattle mix with the local herds, it does not take long for them to be covered with the ticks, by which they are inoculated. Some of the dairymen have been compelled to go out of business, owing to heavy losses. It is the intention of the State Board of Health to take steps to prevent the spread of the disease next summer.

SOUTHWESTERN KENTUCKY MEDICAL SOCIETY.—The Southwestern Kentucky Medical Society held its regular meeting in Bowling Green, on October 15 and 16, Dr. McLaren, of Elkton, President. The following are some of the titles of papers read: "The Technique of Vaginal Hysterectomy for Pelvic Abscess and Uterine Myoma," by W. H. Wathen, Louisville; "Fissure of the Anus," by A. B. Cooke, Nashville; "Asepsis and Antisepsis," by J. N. McCormack, Bowling Green; "The Value of Venesection and the Necessity for its prompt Performance, with Case to Illustrate," by T. Edward Bruce, of Elkton; "Puerperal Uremia, with and without Convulsions," by D. G. Simmons, Adairville. The following were the officers elected: President, Dr. D. G. Simmons, Adairville; Vice-Presidents, Drs. E. S. Smith, of Hodgenville, H. P. Cartwright, of Bowling Green; Secretary, Dr. R. W. Fry, of Trenton; Treasurer, Dr. G. S. Mosely, of Casky. Russelville was selected as the next place of meeting.

CENTRAL KENTUCKY MEDICAL SOCIETY.—The regular quarterly meeting of this Society met at Lancaster on the 16th, 17th and 18th. The meeting was well attended. Danville will be the next place of meeting in January.

HEALTH OF THE CITY.—Diphtheria has been prevalent throughout the eastern portion of the city to a remarkable extent, three children in one family dying from that cause, and yet in face of all of this, and the six fatal cases during the past week, the Council refused to enact the contagious disease ordinance, which Dr. White, the Health Officer, has been trying so faithfully to have passed. Three times the lower board has passed it, and each time it has been "lost" in the upper board. Why intelligent men are not aware of the benefits to be derived from such an ordinance, is difficult to imagine. At one of the funerals of a child, dead from diphtheria last week, the classmates attended the funeral in a body, and viewed the remains before the procession started—and the prohibiting of public funerals is one of the objections urged against the ordinance.

Typhoid fever is unusually prevalent also for this season of the year, but it is hardly to be wondered at from the low state of the Ohio at present. It is lower now than it has been for eleven years, the "falls" are dry, and sightseers are walking across dryshod. Beargrass Creek, which conveys all of the refuse from the distilleries in the upper part of the city, flows into the river above the city, and the back water now reaches nearly to the pumping station of the water works, about two miles farther up. The water company has no facilities for filtering the city's supply, and those who are compelled to drink the water without filtration at their residences are in great danger. If the water is allowed to stand in vessels more than twenty-four hours, the odor arising therefrom is enough to prevent its use. The city is in great danger, if the drouth is not ended.

There were sixty-three deaths during the past week, and four stillbirths. Of these deaths consumption caused ten, diphtheria and typhoid fever each six.

Washington Notes.

WEEKLY REPORT OF THE HEALTH DEPARTMENT.—The report of the Health Officer for the week ended October 12, is as follows: the deaths reported at the Health Department last week numbered 126. This is an excess of 12 over those reported in the preceding week. Fourteen were from typhoid fever, as against 12 the week previous and 6 in the same period last year. The average of other diseases in fatal form was very similar as between the two weeks. The abeyance of the dangerous contagious diseases still continues, the mortality being confined to chronic and acute brain and heart maladies and those pertaining to childhood. Of the total deaths 50 were children under 5 years of age. Only 9 of these were from diarrheal complaints, the remainder being mainly from premature birth and congenital debility and kindred maladies. With the exception of the persistence of typhoid fever, as mentioned above, which is somewhat in excess of the same periods in former years, the general health of the city is quite favorable. Number of deaths (still-births not included) white, 78; colored, 48; total, 126. Death rate per 1,000 per annum, white, 21.62; colored, 28.28; total, 23.78. Death rate per 1,000 per annum for corresponding week last year, 18.06. Still-births: white, 3; colored, 6; total, 9. The health officer has recommended to the Commission the furnishing of telephones for the use of the physicians to the poor, also an increase of salary from $30 to $40 per month. Both recommendations receive the indorsement of physicians and the public.

DENTAL SOCIETY.—At the meeting of the Washington Dental Society held on the 15th inst., an interesting paper on the "Dental Treatment of Children" was read by Dr. W. N. Cogan. Many valuable suggestions were thrown out by the paper itself and during the discussion which followed. A large attendance of members was present.

RESIDENT STUDENT APPOINTED AT THE WASHINGTON ASYLUM.—George M. Godfrey has been appointed resident medical student at the Washington Asylum Hospital *vice* C. E. Young, resigned.

PHYSICIAN TO THE POOR APPOINTED.—The Commissioners have accepted the resignation of Dr. J. F. Price, physician to the poor in the southwest, and appointed Dr. E. E. Richardson to the position. Dr. Richardson is one of the physicians who recently passed the medical examining board and attained a high standing. He is a graduate of Columbia Medical College.

DR. STONE'S HIGH AVERAGE.—In the recent examination held for applicants to be physician to the poor, twenty-five doctors submitted themselves to the severe tests. Fourteen passed satisfactorily and have been certified to the health officer. The best mark attained was 94 out of a possible 100. This was made by Dr. John H. Stone, of Brightwood. Dr. Stone (son of Dr. Chas. G. Stone) is a graduate of Columbia Medical College, and for some time was resident physician at Garfield Hospital.

PUBLIC HEALTH COMMITTEE MEETS.—A meeting of the Committee of the Washington Board of Trade on Public

Health was called on the 15th inst. by the Chairman, Dr. Samuel C. Busey. Important business was discussed relating to sewers, water supply, milk supply and inspectors, and the annual report of the Committee.

MEDICAL SOCIETY OF THE DISTRICT.—At the meeting of the Society held on the 16th inst., Dr. Bovee presented three specimens of fibroids recently removed. Dr. B. A. Storck read a paper on puerperal septicemia and antisepsis. Both subjects brought out a full and interesting discussion. The following resolution touching the question of typhoid fever in the District was adopted:

"*Resolved*, That the Medical Society commends the efforts of the Health Office to ascertain the number of cases of typhoid fever in the District; and that the corresponding secretary be instructed to send a circular letter to every member of this body, urging him to report at once to the Health Office the number of cases of typhoid fever he has treated since July 1, 1895, and if he has not had any cases to report that fact."

WASHINGTON OBSTETRICAL AND GYNECOLOGICAL SOCIETY.—The two hundred and thirty-third meeting of the Society was held on the 8th inst. at the Arlington Hotel. This was the annual business meeting for the election of officers and committees, and resulted as follows: President, Dr. Geo. Byrd Harrison; Vice-Presidents, Dr. Geo. N. Acker and S. S. Adams; Secretary, Dr. G. W. Cook; Treasurer, Dr. John Van Rensselaer; Corresponding Secretary, Dr. W. S. Bowen. Business Committee, Drs. Winter, Nash and Bowen. Admission Committee, Drs. Spriggs, Deale and Cuthbert. Publishing Committee, Drs. Deale, Spriggs and Cook. The Society will entertain the Southern Gynecological Society at its meeting here in November, and appointed a committee to make arrangements. At the close of the meeting the members sat down to one of the finest banquets ever served in the "Arlington."

MICROSCOPICAL SOCIETY.—The annual meeting of the Society was held on the 8th inst. The following officers were elected: President, Dr. Marshall; Vice-President, Dr. Gibbs; Treasurer, Dr. Bullock; Secretary, Mr. Mooers. A banquet will be held next month.

MEDICAL SOCIETY OF THE DISTRICT.—At the meeting held on the 9th inst., Dr. Shands read a very interesting paper entitled, "The Importance of Early Mechanical Treatment in Anterior Polio-myelitis." A free discussion followed. Dr. J. T. Johnson presented cases and specimens, viz., concretion from an appendicitis, extra-uterine pregnancy, ovarian cysts and two hysterectomies.

CENTRAL DISPENSARY AND EMERGENCY HOSPITAL.—The regular monthly meeting of the Board of Directors of the hospital was held on the 11th inst. The following appointments as assistants, were made by the staff and approved by the Board: Drs. H. S. Goodall, Wallace Johnson, Ada R. Thomas, Rupert Norton, Walter A. Wells, E. E. Morse and Maxwell H. Allen.

RECOMMENDATIONS OF EXCISE BOARD.—The excise law of the District does not provide protection against the adulterations of liquors by dealers or others, hence the Excise Board submitted the following to the Commissioners of the District, with the request that they urge its passage by Congress:

"Every person so licensed, or any other person who shall intentionally or otherwise sell or give away or direct or permit any person or persons in his employ to sell or give away, malt, spirituous and vinous liquors which shall be adulterated with strychnin, strontia, sugar of lead or any substance which is poisonous or injurious to health, shall forfeit and pay the sum of $300 for every such offense, and in case of non-payment of such fine shall be imprisoned in the jail of the District of Columbia for a period of time not exceeding six months or till the same is paid. An analysis made by a practical chemist shall be deemed competent testimony under the provisions of this section."

THE POST-GRADUATE SCHOOL OF MEDICINE OF THE DISTRICT OF COLUMBIA.—The following named gentlemen met on the 10th inst. at the office of Dr. H. L. E. Johnson, and organized the Post-Graduate School of Medicine of the District of Columbia: Dr. H. L. E. Johnson, E. L. Tompkins, W. W. Johnston, Samuel C. Busey, J. Foster Scott, H. D. Fry, S. S. Adams, J. Ford Thompson, T. E. McArdle, Chas. W. Richardson, James Kerr, G. N. Acker, W. H. Wilmer, M. F. Cuthbert, E. M. Parker, G. Wythe Cook and George Byrd Harrison. The meeting was called to order by Dr. Johnson, and Dr. Samuel C. Busey was unanimously elected President. Upon motion the President appointed a committee to draft a constitution and by-laws. The meeting adjourned pending the report of the committee.

THE PUBLIC SERVICES.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from October 10, 1895, to October 17, 1895.

Major B. F. Pope, Surgeon U. S. A., is granted leave of absence for thirty days.

Capt. Julian M. Cabell, Asst. Surgeon, ordered to Davids Island, N. Y., for duty, in lieu of reporting to the Surgeon-General for duty.

Major Henry M. Cronkhite, Surgeon, having been found incapacitated for active service, is retired, to date from Sept. 17, 1895.

First Lieut. Isaac P. Ware, Asst. Surgeon, is granted leave of absence for one month, on surgeon's certificate of disability, with permission to leave the limits of the Department.

First Lieut. John S. Kulp, Asst. Surgeon U. S. A., is granted leave of absence for one month, to take effect about Nov. 10, 1895, with permission to apply to the Adjutant-General of the Army for an extension of one month.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending October 19, 1895.

Medical Directors G. S. Beardsley and P. S. Wales, ordered to duty as members of the naval examining and retiring board.

P. A. Surgeon J. S. Sayre, ordered to treatment at the Philadelphia Naval Hospital.

P. A. Surgeon C. H. T. Lowndes, detached from the naval hospital at Mare Island, and ordered to the Marine Rendezvous, San Francisco, Cal., and in attendance on officers in that city.

P. A. Surgeon C. J. Decker, detached from the Marine Rendezvous and special duty in San Francisco, and ordered to the naval hospital at Mare Island.

APPOINTMENT.

J. C. Rosenblueth appointed Asst. Surgeon in the Navy, October 14.

Marine-Hospital Changes. Official list of changes of station, and duties of Medical Officers of the U. S. Marine-Hospital Service, for the fifteen days ended October 15, 1895.

Surgeon R. D. Murray, granted leave of absence for thirty days, Oct. 4, 1895.

Surgeon Fairfax Irwin, granted leave of absence for thirty days, Oct 4, 1895.

P. A. Surgeon C. E. Banks, detailed as chairman of board for physical examination of officer and candidates, revenue cutter service, Oct 2 and 8, 1895.

P. A. Surgeon S. D. Brooks, when relieved from temporary duty at St. Louis, Mo., to rejoin station at Chicago, Ill., Oct. 3, 1895.

P. A. Surgeon G. M. Magruder, upon completion of duties at Camp Jenner, Eagle Pass, Texas, to rejoin station at Galveston, Texas, Oct. 11, 1895.

P. A. Surgeon L. L. Williams, to proceed from Charleston, S. C., to Waynesville, Ga., as inspector, Oct. 2, 1895.

P. A. Surgeon J. O. Cobb, to proceed to Victoria, B. C., and Vancouver, Wash., on special temporary duty, Oct. 12, 1895.

P. A. Surgeon B. W. Brown, detailed as recorder of board for physical examination of officer and candidates, revenue cutter service, Oct. 2 and 8, 1895.

P. A. Surgeon E. R. Houghton, granted leave of absence for thirty days from date of being relieved from duty at Vineyard Haven, Mass., Oct. 5, 1895.

Asst. Surgeon Emil Prochazka, when relieved from temporary duty at Charleston, S. C., to proceed to Cairo, Ill., for temporary duty, Oct. 12, 1895.

Asst. Surgeon A. R. Thomas, relieved from temporary duty at New Orleans, La., and directed to rejoin station at St. Louis, Mo., Oct. 3, 1895.

Asst. Surgeon J. B. Greene, relieved from temporary duty at Wilmington, N. C., and directed to proceed to Vineyard Haven, Mass., and assume temporary command of the Service, Oct. 2, 1895.

RESIGNATION.

P. A. Surgeon E. R. Houghton, resignation accepted, to take effect upon expiration of leave of absence, Oct. 5, 1895.

LETTERS RECEIVED

American Express Co., Chicago, Ill.; Ayer, W. W. & Son, Philadelphia, Pa.

Bach, J. A., Milwaukee, Wis.

Clark, Robert, Co., Cincinnati, Ohio; Carpenter, J. T., Philadelphia, Pa.; Chaddock, C. G., St. Louis, Mo.

Hobday, W. A., Chicago, Ill.

Johnson, H. L. E., Washington, D. C.

Keiper, Geo. F., La Fayette, Ind.

Lang, J. M., Chicago, Ill.

Moore, W. H., Brockport, N. Y.

Parker, W. W., Richmond, Va.

Smart, Chas., Washington, D. C.

Woodbury, Frank, Philadelphia, Pa.; Walker, W. H., Oakland, Texas.

Young, A. G., Augusta, Me.